3Com

User Guide

3Com Network Jack

Model NJ200

http://www.3com.com/
http://www.3com.com/productreg

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CONTENTS

1 INSTALLING THE NJ200 NETWORK JACK

The 3Com NJ200 Network Jack is a 4-port, managed Ethernet switch that fits into any standard electrical wall outlet or data port opening. It brings switching capabilities to any single port on an Ethernet network by allowing you to connect up to four networking devices, such as computer, printers, and Voice Over IP (VoIP) telephones to the network via one Ethernet port. You can use optional connectors to connect one or two additional devices to separate network segments through the same Network Jack. All ports feature 10/100 Mbps auto-negotiation.

Power to the Network Jack is provided through one of the following methods:

- Over the network via an integrated switch that supports Power Over Ethernet.
- Over the network via an optional single-port or multi-port Ethernet power supply.
- Locally via an optional local power supply.

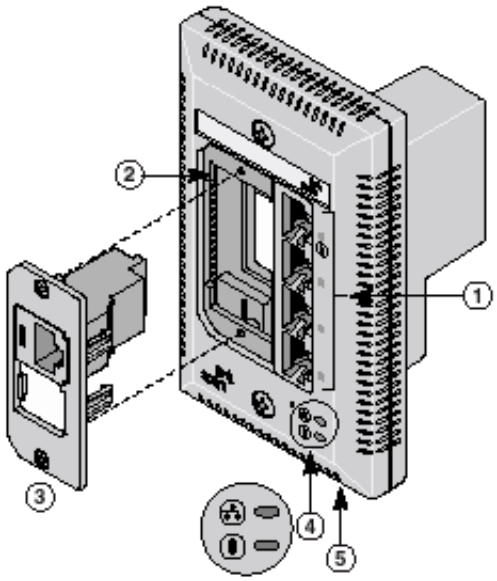
NOTE: Power Over Ethernet, also known as in-line power, is a method to provide power to equipment over an Ethernet cable, allowing a device to receive both data and power from the same network cable. The NJ200 is ideally powered by a switch that is IEEE 802.3af-compatible or has a Capacitive Power Discover Process (24V or 48V). The NJ200 can also be powered by some switches which are not 802.3af-compatible. Consult the 3Com web site for more information.

You can manage the NJ200 Network Jack using the included Central Configuration Manager. You can also use a supported SNMP management console as you would with any managed device on your network, but greater management and control is available through the Configuration Manager software. Management features include:

- Device discovery
- Port status (state, duplex, speed)
- Statistics
- Port control (port state, flow control, AutoMDI(X), multicast limit)
- QoS/Priority
- Port-based VLAN
- VLAN tag add/remove
- Firmware upgrade

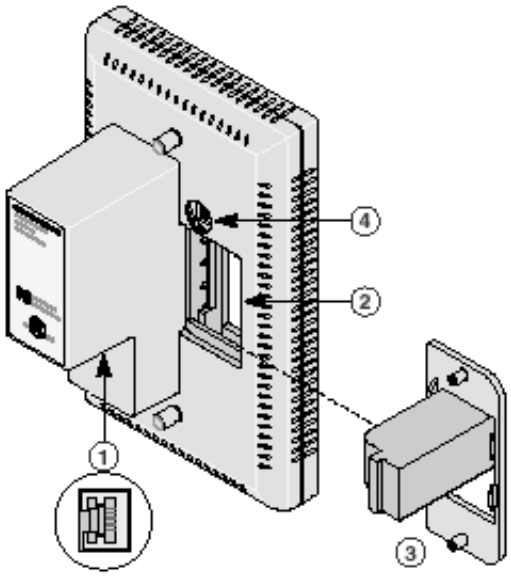
About the Network Jack

The following diagram shows the front view of the Network Jack:



1	Switched ports with LEDs	Allow up to four devices to be connected to the network. A green LED indicates connection status when a device is using a particular port. Port number 1 is also a power-forwarding port; it can be used with any standard networking device as well as to power a VoIP telephone on a network that uses IEEE 802.3af-compatible Power Over Ethernet. An additional LED indicates when the port is forwarding power to a device connected to that port.
2	Slot for adapter plate	Can be fitted with an adapter plate, which can be installed with up to two pass-through ports.
3	Adapter plate with installed pass-through port connector	Can be used for voice or other networking applications. The port bypasses the functionality of the switch, allowing you to set up a connection to a separate network segment or to connect to an analog or digital PBX telephone. The adapter plates are available from 3Com. However, you must purchase the connectors from the manufacturer. See "Installing the Adapter Plate and Pass-Through Ports" on page 8 for more information.
4	LEDs	Indicates network connection status. Indicates power status.
5	Power socket	Can be used to power the Network Jack with a local power supply (available for purchase from 3Com); required if your network does not support Power Over Ethernet.

The following diagram shows the back view of the Network Jack:



1	Ethernet uplink port (RJ-45 female)	Connects the Network Jack to the network. Make sure the port on the network switch to which the Network Jack is connected is configured as a standard MDI-X port.
2	Slot for adapter plate	Can be fitted with an adapter plate, which can be installed with up to two pass-through ports.
3	Adapter plate with installed pass-through port connector	Connects the installed pass-through port to the network.
4	Dip switches	Select the type of Power Over Ethernet (Capacitive Power Discovery Process 24V or 48V or IEEE 802.3af) the Network Jack uses. Changing the dip switch settings is required only if your network supports Power Over Ethernet, or if you are using a multi-port Ethernet power supply. See "Setting the Power Over Ethernet Dip Switches" on page 7 for instructions.

Before You Begin

Before you begin installation, register your product at: www.3com.com/productreg.

The Network Jack is available in single- and 20-packs. Before you begin the installation, make sure you have the following items, which are included with the Network Jack:

- 1.5 inch, 6x32 screws (2 per Network Jack) for mounting the Network Jack to the wall or office cubicle.

- Male to male RJ-45 coupler cable (1 per Network Jack) for connecting the Ethernet cable from the network to the Network Jack (required only if your network cable is terminated with a female RJ-45 connector).

Additionally, the following items are shipped with the single pack:

- Compact disc with User Guide and Configuration Manager software.
- Adapter plates for installing connectors to use as pass-through ports. The adapter plates accommodate connectors from suppliers including:
  - Panduit (RJ-45 and RJ-11)
  - Avaya (RJ-45 and RJ-11)

NOTE: The connectors for the adapter plates must be purchased from the manufacturer. For a list of supported connectors, go to www.3com.com/.

- Adapter plate screws (2) for mounting the adapter plate to the Network Jack.

Obtaining Optional Components

The Network Jack works with the following optional components, all of which are available from 3Com. Order online at www.3com.com or by calling 1-877-949-3266.

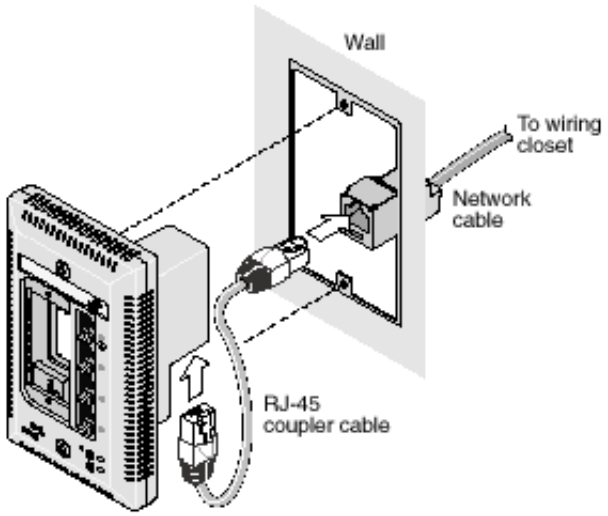
Component	Purpose	3C Number(s)
Adapter plates	For installing pass-through port connectors of your choice that allow a direct connection to another network segment or for connecting an analog or digital PBX telephone.	3CNJAP-PA-20 3CNJAP-AV-20
Extension ring	For ensuring that the Network Jack is properly mounted to a cubicle; required if the cubicle opening: ▪ Has a depth of fewer than 1.5 inches. ▪ Does not support the NEMA-WD6 standard. ▪ Does not have pre-drilled screw holes for standard mounting.	3CNJEXTRING
Single-port Ethernet power supply	For providing Power Over Ethernet to locally power a single Network Jack.	3CNJPSE
Multi-port Ethernet power supply	For providing Power Over Ethernet to power up to 24 Network Jacks.	3CNJPSE24 3C10220 3C10222
Local power supply	For locally powering a single Network Jack; required if your network does not support Power Over Ethernet.	3CNJPSL
VoIP telephone power cable	For powering a VoIP telephone on a network that uses Capacitive Power Discovery Process-compatible Power Over Ethernet.	Check the 3Com web site

Installing the Network Jack

Installing the Network Jack consists of the following steps:

1. Set up the power supply (page 5).
2. If necessary, set the Power Over Ethernet dip switches (page 7; optional, required only if your network supports Power Over Ethernet or if you are using a single-port or multi-port power supply).
3. Install the adapter plate and pass-through ports (page 8).
4. Plan the installation (page 9).
5. Set up the network cabling at your site (page 10).
6. Connect the Network Jack to the network (page 10).
7. Mount the Network Jack to the wall or office cubicle (page 11).
8. Connect the local power supply (page 11; optional) not required if your network supports Power Over Ethernet or if you are using a single-port or multi-port power supply).
9. Connect network devices to the Network Jack (page 13).

The following diagram displays an overview of the recommended installation, where the Network Jack is being connected to an Ethernet network cable that is terminated with a female RJ-45 connector. Detailed installation instructions are included in the sections that follow.



Setting up the Power Supply

Power to the Network Jack can be supplied one of the following ways:

- Over the network via an integrated switch that supports Power Over Ethernet.
- Over the network via a multi-port Ethernet power supply.
- Over the network via a single-port Ethernet power supply.
- Locally via a 3Com local power supply.

Before you begin the installation, determine which type of power supply the Network Jack will use.

NOTE: For a list of power supplies that support the Network Jack, go to www.3com.com/.

CAUTION: Use only a power supply that is provided or approved by 3Com for use with this Network Jack. Failure to do so may result in damage to the Network Jack, or may result in a hazardous situation or personal injury.

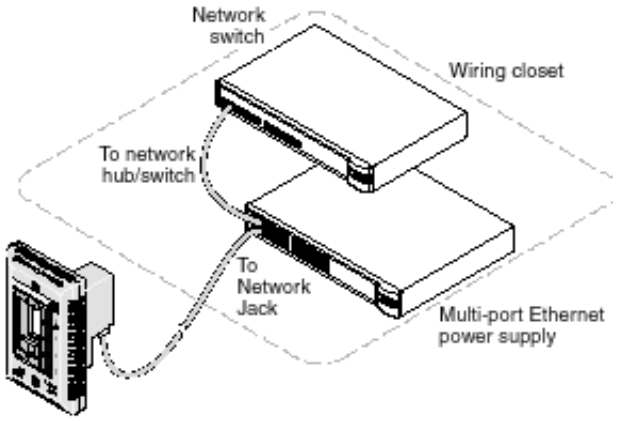
Using an Integrated Switch with Power Over Ethernet

To use Power Over Ethernet, you must have a switch on the network that has Power Over Ethernet integrated into it. You must then determine if it is compatible with Capacitive Power Discovery Process (24V or 48V) or IEEE 802.3af.

Using a Multi-port Ethernet Power Supply

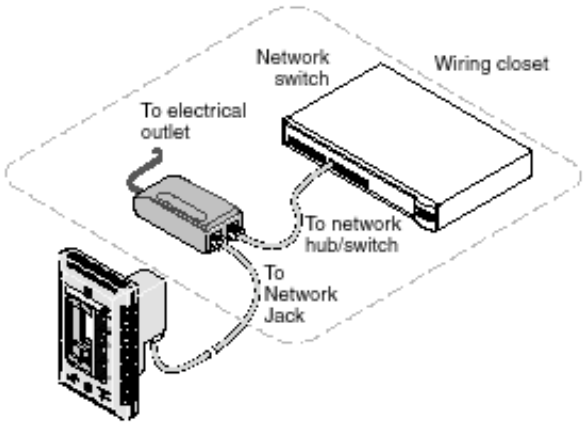
To use a multi-port Ethernet power supply, you must connect the power supply to your network, as shown in the illustration.

The multi-port Ethernet power supply from 3Com connects to an existing Ethernet or Fast Ethernet infrastructure with standard Category 5 or Category 5e UTP cabling, and powers up to 24 Network Jacks. See "Obtaining Optional Components" on page 4 for ordering information. For complete installation instructions, see the multi-port Ethernet power supply documentation.



Using a Single-port Ethernet Power Supply

To use a single-port power supply, connect the power supply to the network hub or switch and to the Network Jack, as shown in the following illustration. See "Obtaining Optional Components" on page 4 for ordering information. For complete installation instructions, see the single-port Ethernet power supply documentation.



Using the 3Com Local Power Supply

To use the local power supply, make sure you have an electrical outlet near the site where the Network Jack will be installed. First plug the power cord into the Network Jack, then plug it into the electrical socket. See page 12 for more details.

Setting the Power Over Ethernet Dip Switches

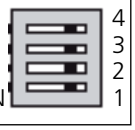
If your network switch or power supply supports Power Over Ethernet, you must set the dip switches on the Network Jack to the appropriate setting: Capacitive Power Discovery/24V, Capacitive Power Discovery/48V, or IEEE 802.3af.

NOTE: If you are not using Power Over Ethernet to power the Network Jack, skip this section. Go to "Installing the Adapter Plate and Pass-Through Ports" on page 8 to continue.

CAUTION: Before setting the dip switches, make sure that power to the Network Jack is off.

Do not change dip switches 1 and 2 from their factory default settings (OFF). Changing these settings may result in performance degradation.

Set the appropriate dip switches (labeled 3 and 4) for the type of Power Over Ethernet supported. The default setting is IEEE 802.3af-compatible Power Over Ethernet.

Power Over Ethernet Supported	Dip Switch Numbers	Setting
Capacitive Power Discovery/24V Ethernet Power Source	4 (ON) 3 (ON)	
Capacitive Power Discovery/48V Ethernet Power Source	4 (ON) 3 (OFF)	
IEEE 802.3af-compatible Power Over Ethernet	4 (OFF) 3 (OFF)	

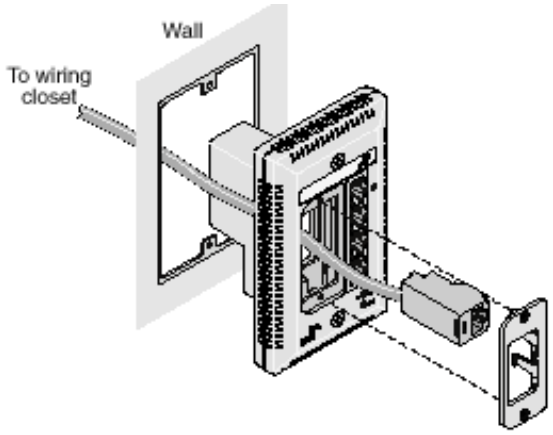
Installing the Adapter Plate and Pass-Through Ports

Install the blank adapter plate, or if you want to use pass-through ports for connecting an analog or PBX digital telephone or for setting up a connection to a separate network segment, purchase supported connectors and install them on the appropriate Network Jack adapter plate (included with the single pack; available for purchase separately with the 20-pack).

For a list of connectors that are supported with the Network Jack adapter plates, go to www.3com.com.

NOTE: If you are not planning on installing the adapter plate and pass-through ports, skip this section. Go to "Planning the Installation" on page 9 to begin the installation.

1. Pull the network cable(s) from the wiring closet to the location of the Network Jack.
2. Thread the network cable(s) through the empty slot on the Network Jack.



3 Terminate the end of the network cable(s) with the connector(s) you purchased separately.

Refer to the connector manufacturer's instructions for terminating the cable. Be sure to test end-to-end system functionality and verify that it is working.

4 Snap the connector(s) into the appropriate adapter plate.

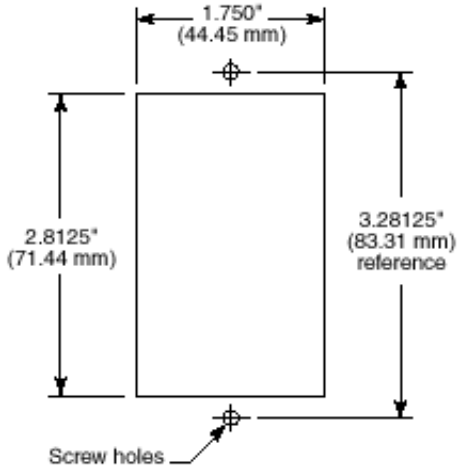
Each adapter plate is labeled with the name of a connector's manufacturer. Be sure to use the adapter plate that matches the manufacturer of your connector(s).

5 Mount the plate to the Network Jack using the two adapter plate screws provided.

Planning the Installation

When installed, the back of the Network Jack extends into a wall or cubicle opening 1.5 inches. Because the depth of some wall and cubicle openings differ, observe the following requirements and recommendations before installing the Network Jack:

- Make sure the wall or cubicle opening where the Network Jack is being installed complies with the NEMA-WD6 standard, as described below.



- Make sure the distance between the back of the Network Jack and the inside of the wall or cubicle opening is at least 1.5 inches (3 inches is recommended).

NOTE: Some cubicle openings have a depth of 1.2 inches. In this case, install the Network Jack using the extension ring (available for purchase separately; see "Obtaining Optional Components" on page 4) to obtain the minimum 1.5-inch depth.

If installing into a wall junction box, make sure there is enough space between the back of the Network Jack and the inside of the junction box to maintain an acceptable bend radius on the cable. If you encounter interference or need additional clearance between the Network Jack and where it sits inside the junction box, use the extension ring.

- To ensure proper horizontal cabling functionality, adhere to the following network cabling standards during installation:

- ANSI/TIA/EIA-568
  Commercial Building Telecommunications Cabling Standard
- ANSI/TIA/EIA-569
  Commercial Building Standard for Telecommunications Pathways and Spaces

Setting up the Network Cabling at Your Site

The network cabling at your site (from the wiring closet to the wall or cubicle opening) may already be installed. If it is not, install the cabling following these general guidelines.

CAUTION: It is recommended that a professional cable installer performs these procedures. Be sure to adhere to local safety and regulatory codes during the cable installation.

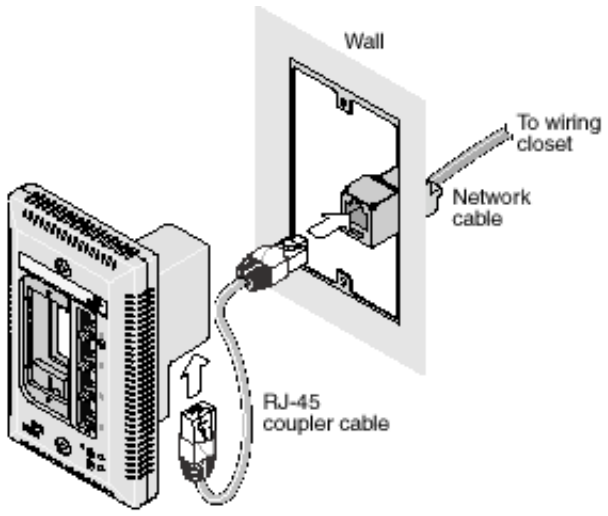
1. Connect one end of an Ethernet cable to your network. Usually, this connection is done in a network wiring closet, via the patch panel.
2. Terminate the other end of the cable at the location where the Network Jack is being installed (using either a female or male RJ-45 connector).

   Refer to the connector manufacturer's instructions for terminating the cable. Be sure to test the connector and verify it is working.

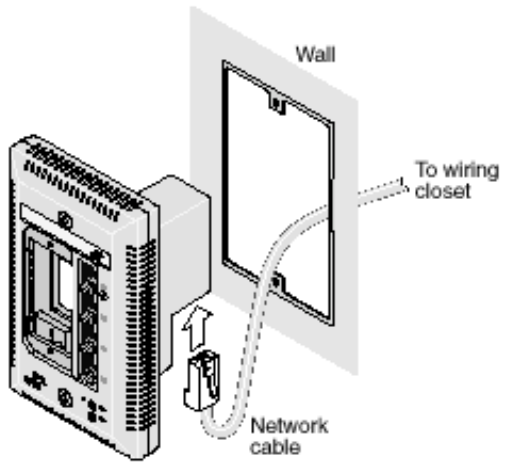
Connecting the Network Jack to the Network

The method for connecting the Network Jack to the network is determined by how your network cable is terminated (as described in the previous section, "Setting up the Network Cabling at Your Site").

- If the end of the cable is terminated with a female RJ-45 connector, use the RJ-45 coupler cable included in the package to connect the Network Jack to the network cable (recommended installation.)



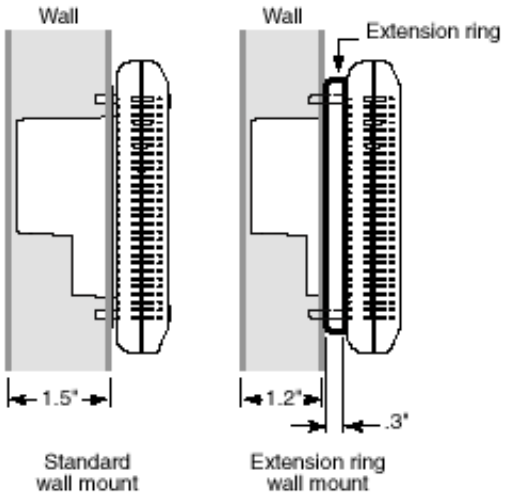
- If the end of the cable is terminated with a male connector, connect the network cable directly into the Ethernet uplink port.



Mounting the Network Jack

After connecting the Network Jack to the network, use the two provided screws to mount the Network Jack in any standard NEMA-WD6 cubicle opening or wall outlet.

If the cubicle or wall opening has a depth of fewer than 1.5 inches, does not support the NEMA-WD6 standard, or does not have pre-drilled screw holes, mount the Network Jack using the extension ring, as shown below.



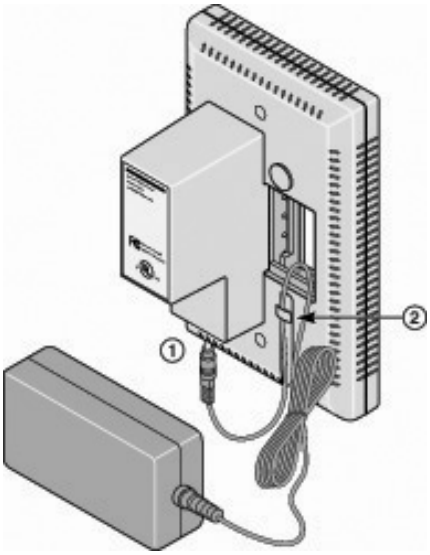
CAUTION: Make sure the vents along the edges of the Network Jack faceplate are clear of any obstructions. If necessary, install the extension ring on recessed openings to allow airflow to vents.

Connecting the Local Power Supply (Optional)

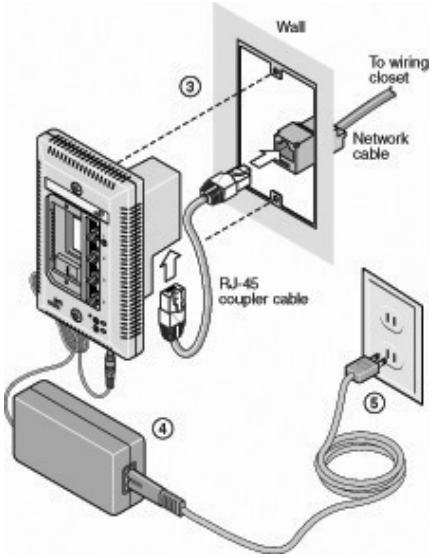
If your network does not support Power Over Ethernet, or if you are not using a single-port or multi-port Ethernet power supply, you must purchase a local power

supply from 3Com (see "Obtaining Optional Components" on page 4). To connect the local power supply to the Network Jack, please follow these steps:

1. Route the power cable through the strain relief of the Network Jack (as shown in the diagram below).
2. Securely mount the Network Jack on a wall.



3. Plug the power cable into the Network Jack.
4. Secure the local power supply and cable to the wall.
5. Plug the local power supply into the power source.



WARNING: Use the local power supply available from 3Com. Failure to do so may result in damage to the Network Jack, or may result in a hazardous situation.

Connecting Devices to the Network Jack

After the Network Jack is installed and mounted, connect your networking devices (such as computers, printers, etc.) to any of the four switched ports on the front of the Network Jack.

If you installed the adapter plate with pass-through ports, connect the appropriate device(s) to the port(s).

Checking the LEDs

You can verify the Network Jack installation by checking the LEDs.

LED	Description
 (LAN)	▪ On—The Network Jack is connected to the network and a link has been established. ▪ Off—There is no connection to the network.
 (Power)	▪ On—The Network Jack is receiving power (local or via the network). When you first connect power to the Network Jack, there will be a delay of approximately 5 seconds. The power LED light will blink once or twice before remaining solid on. ▪ Off—The Network Jack is not receiving power.

Additionally, each of the switched ports has a green LED which lights when a device is connected. Port #1 also has an amber LED which lights when the Network Jack is forwarding power to a connected device.

2 INSTALLING THE CONFIGURATION MANAGERS

Once you have installed the NJ200 hardware, you need to configure it for use on your particular network. To configure the NJ200, install the Local and Central Configuration managers.

NOTE: You will use the Local Configuration Manager for initial configuration of the NJ200 on your network. It's usually easiest if you load this software on a laptop and use it to configure Network Jacks as you install them.

The NJ200 Central Configuration Manager is used for advanced configuration and management of one or more NJ200s on your network. This software should be installed on the machine you plan to use to manage your NJ200s from a remote location—perhaps the same console you use for SNMP management.

System Requirements

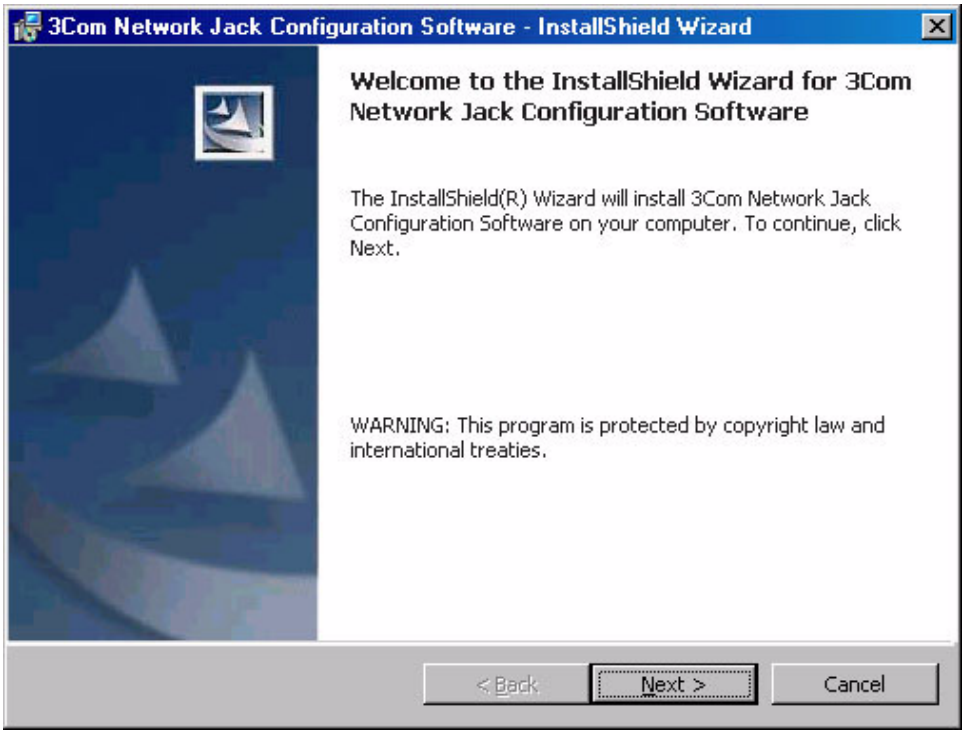
The machine you install the software on should meet the following requirements:

- Pentium processor
- Minimum of 15MB disk space
- Windows 2000 or Windows NT 4.0 with Service Pack 6 installed (Windows 95 and Windows 98 are not recommended operating systems for use with management platforms. In most cases, the Configuration Manager software will work with Windows 95, 98, or XP. However, please check 3Com's web site for additional information regarding XP support)

Installing the Local and Central Configuration Managers

Run the following steps to install the Configuration Manager software:

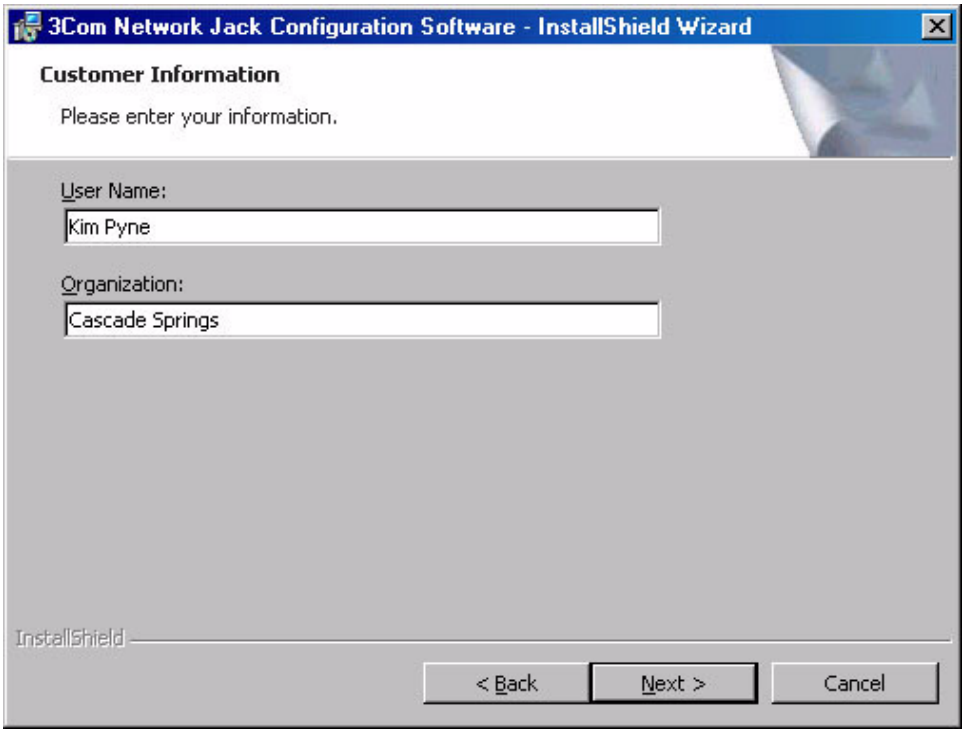
1. Insert the Configuration Manager software CD into your Windows 2000 or Windows NT computer.
2. If your computer is configured to Auto-Play CDs, the installation will start automatically. If not, double-click the setup.exe icon on the CD, and you will see this window:



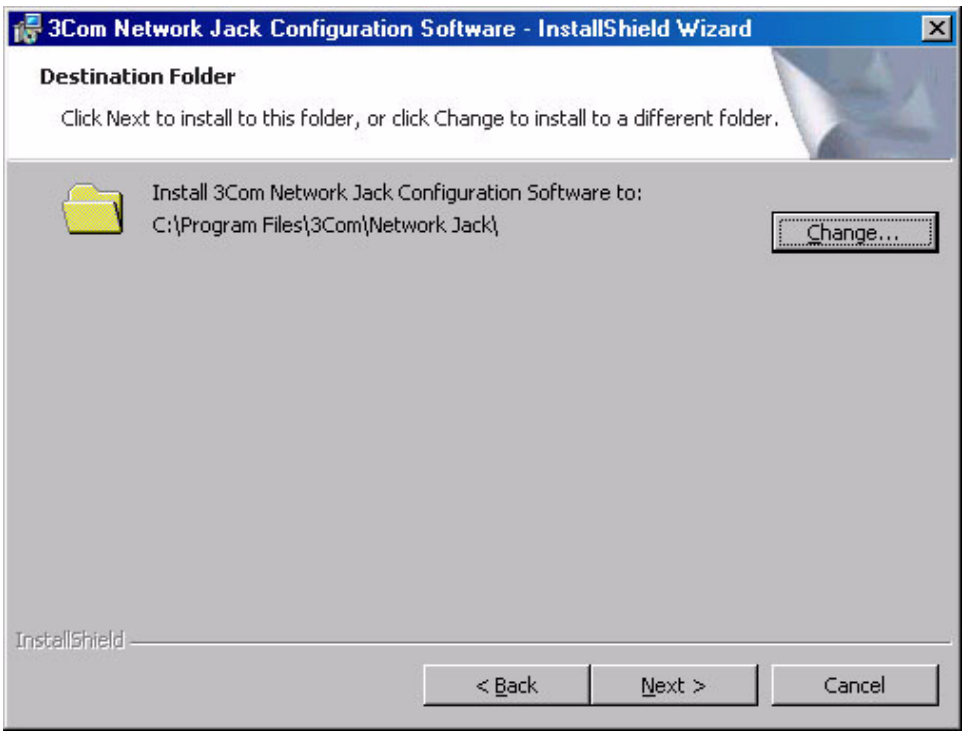
3 Click Next to continue.

4 Carefully read the license agreement. If you agree, click "Yes, I accept" and Next to continue.

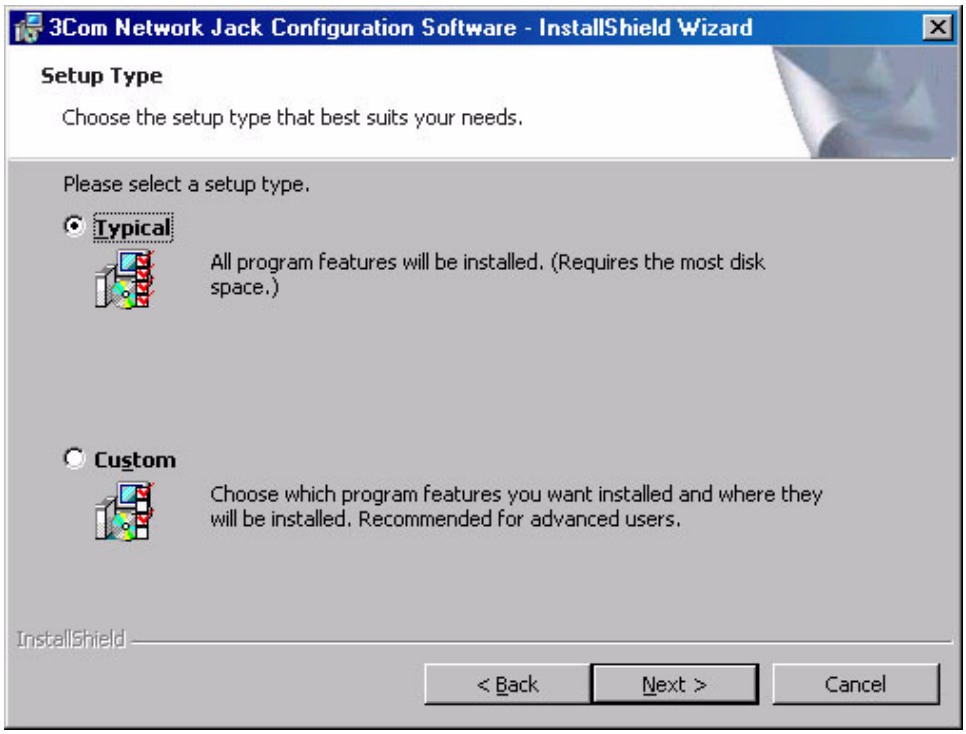
5 Enter your user and organization names and click Next.



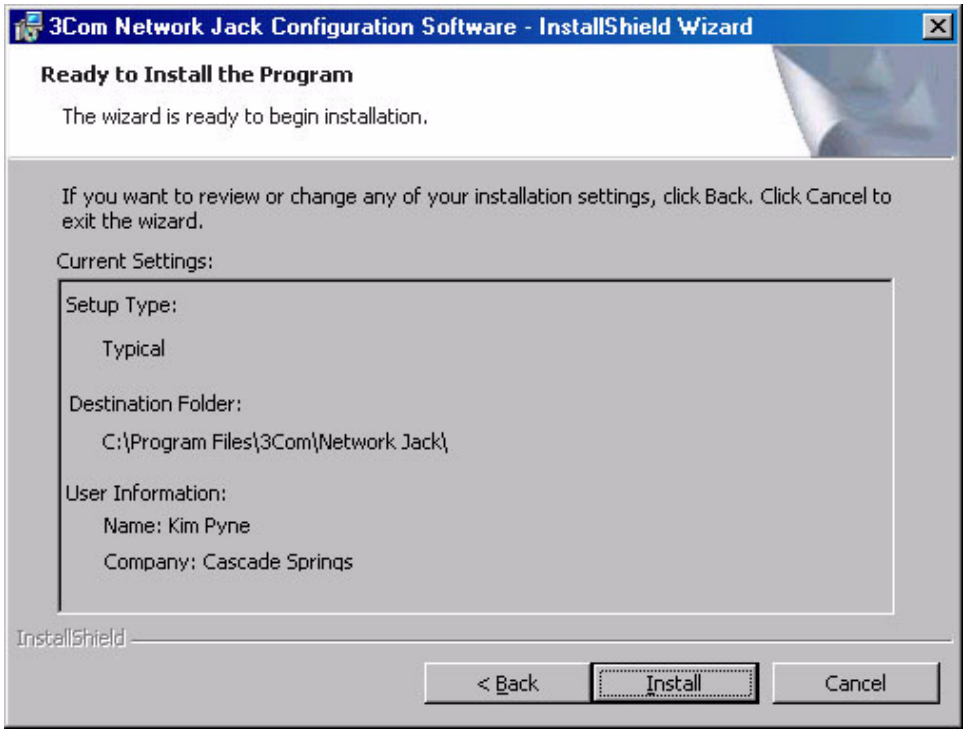
6 The program files will be installed in the directory C:\Program Files\3Com\Network Jack. If you want to change the location of the installation, click Change. Otherwise click Next to accept the default location and continue.



7 Select a typical or custom setup and click Next. The Typical installation will install both the Local Configuration Manager and the Central Configuration Manager on your system. The Custom installation option lets you install just one of the programs if you wish.



8 Review the settings you selected and click the Install button.



9 When the installation has completed, click the Finish button to close the installation utility.

The installation utility will create two shortcut icons on the Desktop--one for the Local Configuration Manager and one for the Central Configuration Manager.

You can also launch the programs from a program group you can access from the Start menu. The program group folder is labeled 3Com Network Jack and can be found under the Programs menu.

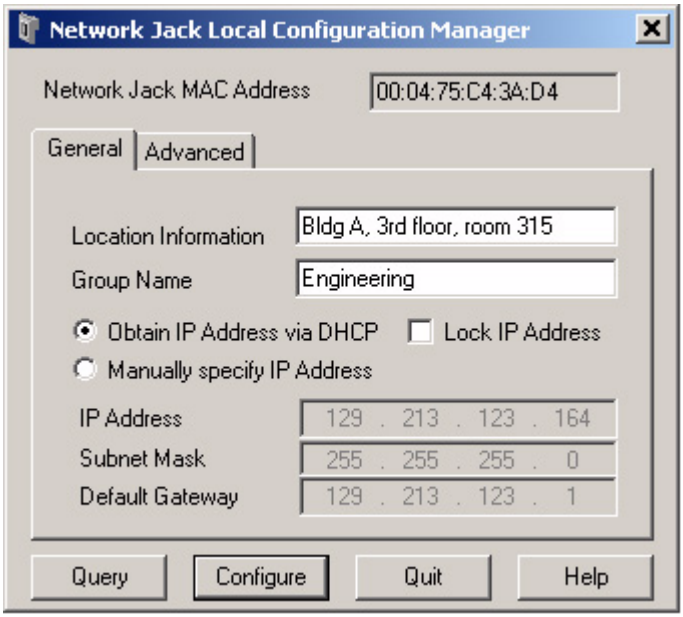
3 USING THE LOCAL CONFIGURATION MANAGER

Initializing the NJ200 Network Jack

Once you have installed the NJ200 hardware on your network and the Local Configuration Manager software on your computer, you need to perform an initial configuration of the Network Jack.

1 The first step is to connect your computer to the NJ200 that you are installing. Attach an Ethernet cable from a computer running the Local Configuration Manager software to any one of the four personal area network (PAN) ports on the front of the NJ200.

2 Click on the desktop shortcut icon labeled NJ200 Local Config Mgr to start the program. When it launches, you will see a window like this:



3 The MAC address and default IP address of the currently connected NJ200 will appear in the first field. If you connect to another NJ200, you must click the Query button to refresh the window.

If you are not connected to any Network Jack, the field will display the message Not Connected. If the Not Connected message appears, check your connection to the Network Jack and click the Query button.

4 Make sure the General tab is selected.

5 Enter Location Information for the particular NJ200 you are configuring. This field can help you and other network managers identify this Network Jack in the future. You may enter any information you like (up to 256 characters), but we recommend that you enter a logical, easy to follow description, such as "Building A, 3rd floor, room 315, West wall."

6 Enter a Group Name for this Network Jack. This can be any name you wish. With the Central Configuration Manager, you can perform management tasks on all Network Jacks with the same group designation.

7 Select the method the NJ200 should use to obtain an IP address. The NJ200 can either get an IP address from an existing DHCP server on your network or you can directly specify the address. If you elect to specify your own address, you should enter the IP Address, Subnet Mask, and Default Gateway information in the appropriate fields.

NOTE: By default, the NJ200 is configured to automatically obtain an IP address from a DHCP server. If no DHCP server exists, or if the NJ200 cannot obtain an IP address, it will default to the IP address 192.168.1.252.

8 If you wish, check the box next to Lock IP Address. Selecting this option will ensure that the Network Jack will always use a particular address.

WARNING: If you lock an IP address and reserve it for this Network Jack, make sure you configure your DHCP server so it won't distribute that address to other devices.

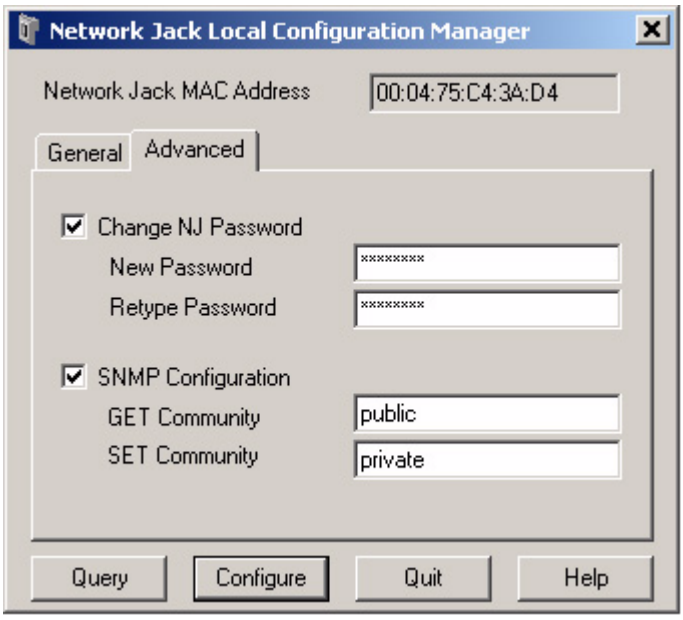
9 Click the Configure button and the Local Configuration Manager will ask you to enter the password for the device. If you haven't changed the password, you should enter the default password, which is "**password**" (without the quotes). Your changes are sent to the NJ200 and will become effective immediately.

Those are the only steps *required* to initialize your NJ200 Network Jack.

Setting Advanced Options

If you want to change the default password of the NJ200 or manage it from an SNMP console, you can configure these settings from either the Local Configuration Manager or the Central Configuration Manager (covered in the next chapter). In the Local Configuration Manager, both settings are found under the Advanced tab.

1 Select the Advanced tab on the NJ200 Local Configuration Manager window.



2 To change the Network Jack's configuration password, click on the box next to Change NJ Password. Then enter the new password in both password fields. (You must enter the password twice to ensure you entered it correctly.) The password you select can be any combination of letters and numbers between 8 and 32 characters.

3 To configure the NJ200 for management with an SNMP console, select the SNMP Configuration box. Enter the GET Community String and SET Community String in the appropriate fields. Each field lets you enter any combination of letters and numbers up to 32 characters.

4 Click the Configure button and the Local Configuration Manager will ask you to enter the password for the device. If you haven't changed the password, you should enter the default password, which is "**password**" (without the quotes). Your changes are sent to the NJ200 and will become effective immediately.

NOTE: You should change the password to ensure that no one else can re-configure your system. Make sure you remember the new password you set. ***If you forget the new password, you will not be able to perform any other configuration tasks unless you send the device back to 3Com****.*

4 USING THE CENTRAL CONFIGURATION MANAGER

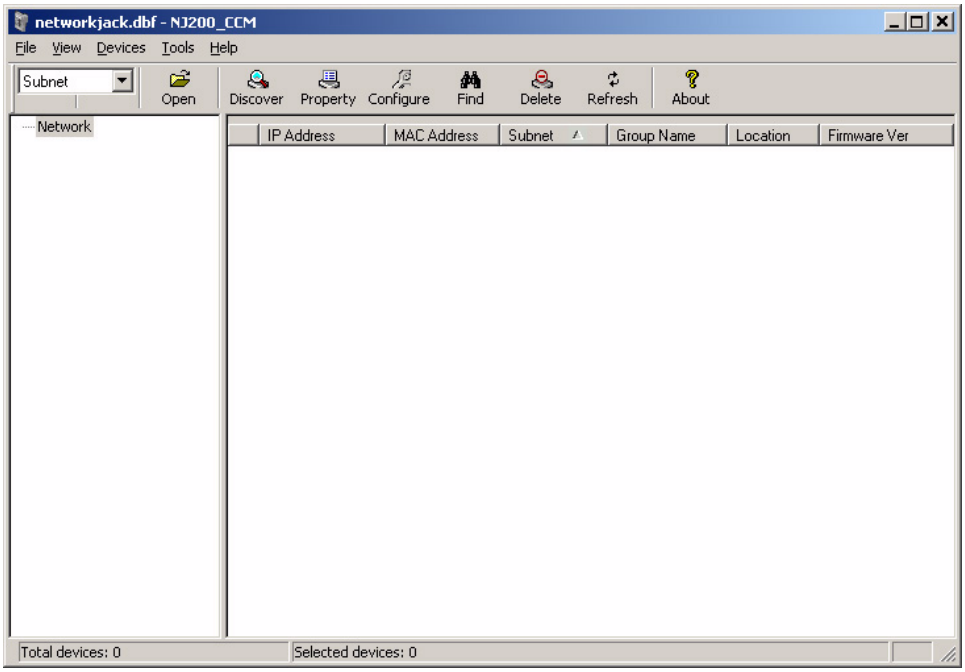
You should use the Local Configuration Manager to initialize each of the NJ200 Network Jacks installed on your network. Once you have completed that step, you can manage all of them with the Central Configuration Manager.

Install this program on any computer on your network you want to use as a central management console (See chapter 2, "Installing the Configuration Managers" for help). You can use the same machine that has your SNMP-based management platform. The Central Configuration Manager will be able to configure and manage all of the Network Jacks that reside on your network.

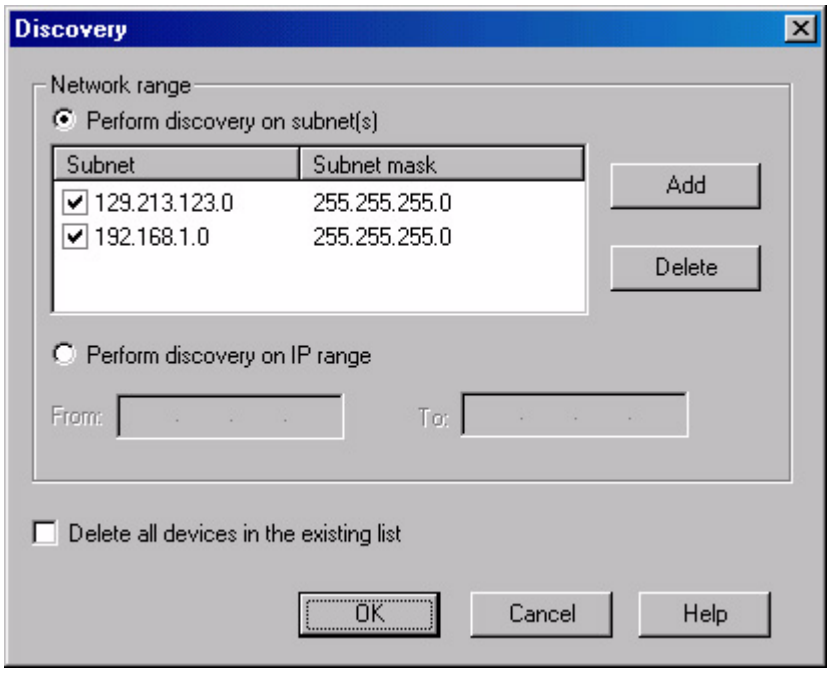
Discovering NJ200 Devices on Your Network

In order to manage the NJ200 Network Jacks on your network, the Central Configuration Manager needs to include them in its database. The easiest way to add new NJ200 Network Jacks to the database is to use the device discovery tool included in the Central Configuration Manager. The first time you run the Central Configuration Manager, it will automatically take you to the Discovery window as shown under step two below. To discover devices on your network, run the following steps:

1 Open the Central Configuration Manager by double-clicking on the NJ200 Central Config Mgr desktop icon. When it launches, you will see a window similar to this one:



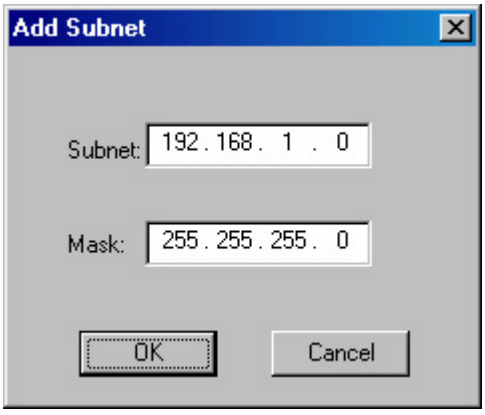
2 Select Discovery from the Devices menu. The following window will appear:



NOTE: The default subnets are the ones your machine is connected to.

3 You can discover new devices based on a specific subnet or on a specific range of IP addresses.

a To discover devices by subnet, select that option on the screen. Click the Add button to add a new subnet to the discovery list. The following box will appear:



Fill in the Subnet and Mask fields and click OK.

or

b To discover devices within a certain IP range, select that option on the screen and complete the From and To fields.

4 If the box next to "Delete all devices in the existing list" is checked, the discovery process will replace all of the devices in your current database with the new devices it discovers. If unchecked, the discovery process will add newly discovered devices to the current database.

5 Click OK to start the discovery process.

The device discovery tool will return the following information from the NJ200 Network Jacks on your network:

- IP address
- MAC address
- Subnet address
- Group Name
- Location information
- Firmware version

You can sort this information in ascending or descending order.

NOTE: Discovered devices are automatically added to the default database. This default database will open automatically when you launch the Central Configuration Manager. If you like, you can keep several database files, each with its own list of devices. For example, you may want a separate database for each subnet you manage. To save a database file or open another database file, select the Open Database or Save Database As options from the File menu.

You can view discovered devices many ways. On the left side of the window, under the toolbar, you can see a drop down box with options for either Subnet, Firmware Ver, or Group Name. The option you select in this box determines how the views are displayed in the left pane of the window.

When Subnet is selected (the default option), you will see a list of IP subnets to choose from. Selecting Network will show all of the discovered devices in the database. If you select a particular subnet, only the devices in that subnet will be displayed.

When Firmware Ver is selected, you will see a list of the different firmware versions loaded on the devices. This view is particularly useful if you want to select only the devices with an old firmware version so you can perform an upgrade.

When you select Group Name from the drop down list, the Central Configuration Manager will present a list of the different group names you have specified.

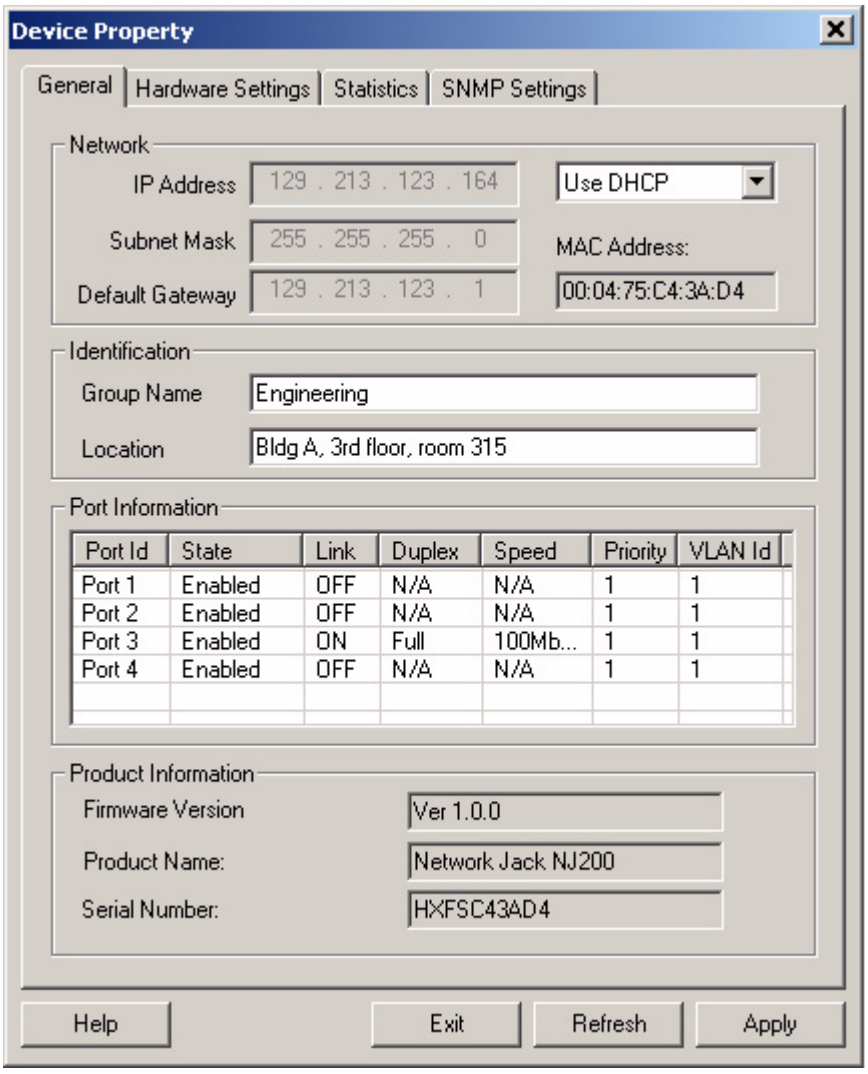
Viewing Device Properties

Once the database is populated with NJ200 Network Jacks on your network, you can begin to manage those devices. The main window of the Central Configuration Manager shows a list of devices in the current database with the information retrieved during the discovery process. You can view and configure the properties for a **single** NJ200 using this window. To configure multiple devices

at one time, see "Changing Device Configuration" on page 31. To get more detailed information about a device, you should check its properties:

1 Select a Network Jack from the devices list.

2 Select Property from the Devices menu or from the toolbar. You can also open this window by right-clicking your mouse and selecting Property.



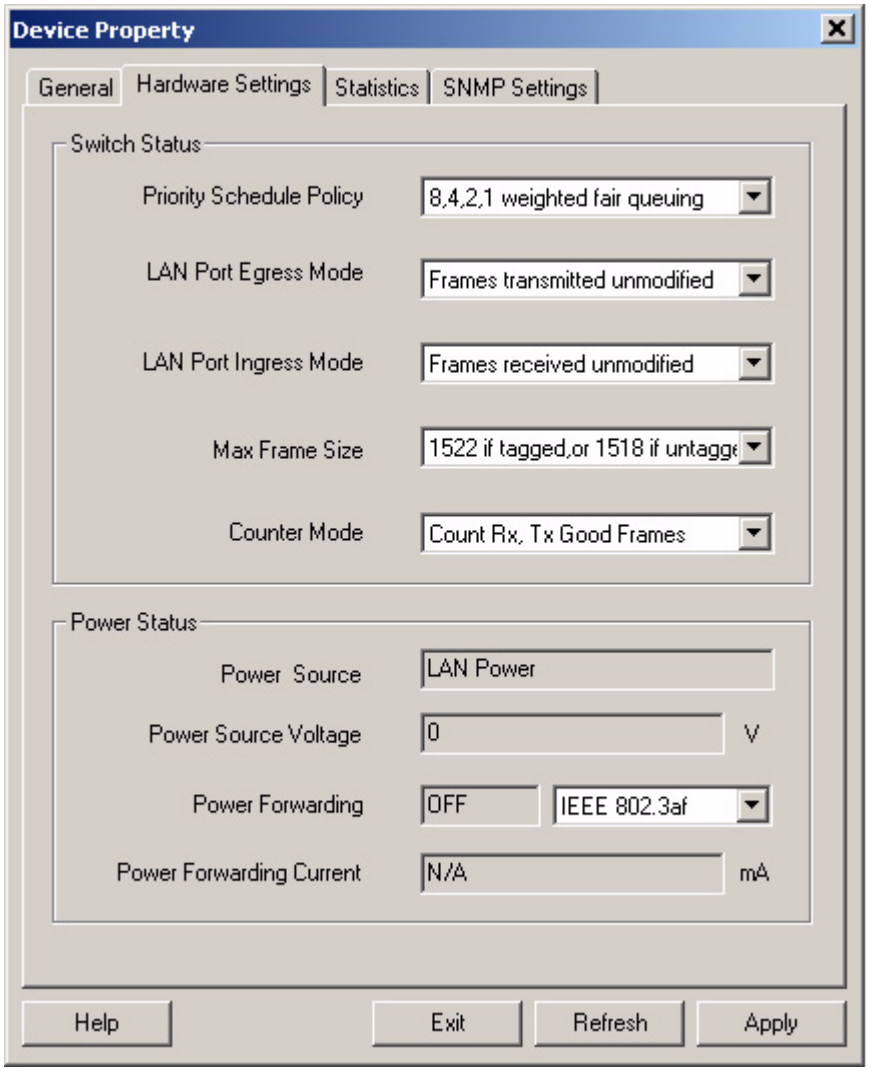
3 With the General tab selected, you can view and edit information about the device such as the IP address, subnet mask, default gateway, and whether it uses a static IP address or gets its address from a DHCP server. You can also view and edit the Network Jack's Group Name and Location information.

4 Click Apply to save any changes you make to the fields in this window.

5 In the middle of this window you'll see information about each of the four PAN ports on the front of the Network Jack. You can check to see if the port is Enabled or Disabled, if there is a network link, whether or not it's running at half or full duplex, what speed it's set for, its priority, and whether or not it's part of a virtual network (VLAN).

6 Under the Product Info box, you can see the current firmware version of the Network Jack, the Product Name, and the Serial Number.

7 Click on the Hardware Settings tab to view status information about the switch.

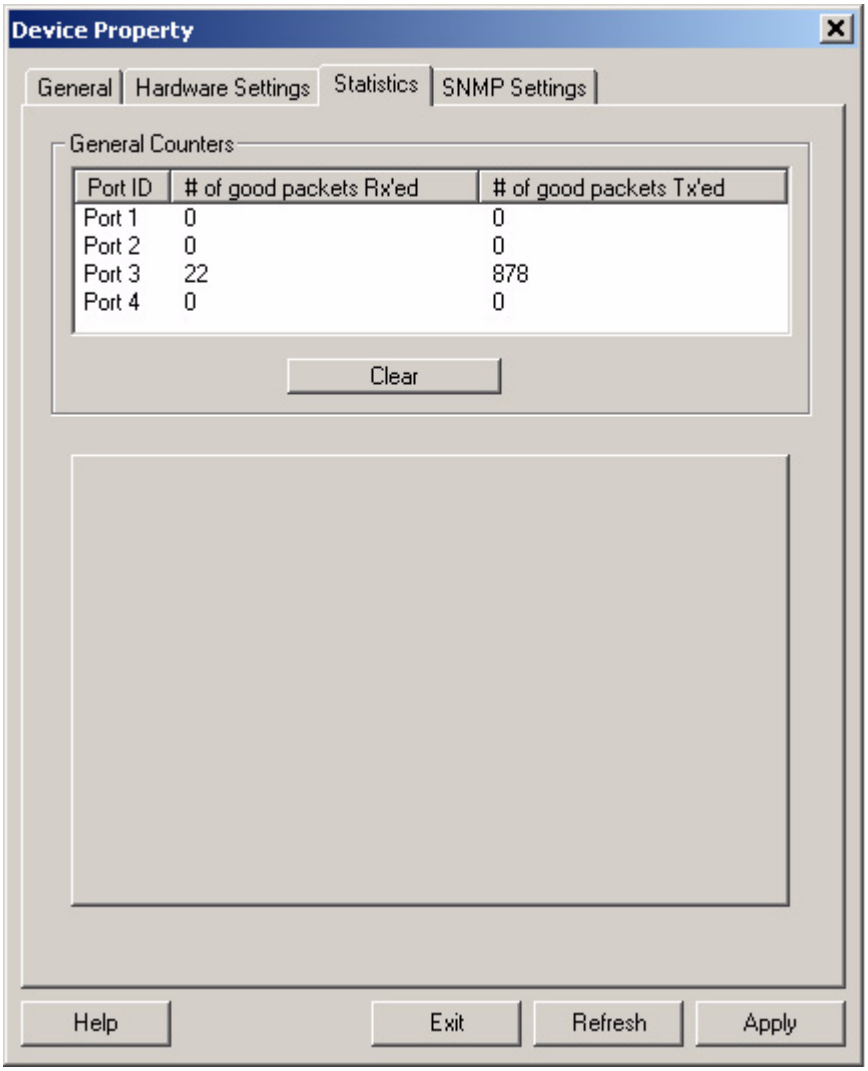


Several fields in this window can be edited, a few cannot. You can change the values of the fields with drop-down lists: Priority Schedule Policy, LAN Port Egress Mode, LAN Port Ingress Mode, Max Frame Size, Counter Mode, and Power Forwarding.

8 Simply select the value you wish to change from the drop-down list of options.

NOTE: You can click Apply at any time to save the changes you have made. But be sure to click Apply after you have finished making all your changes.

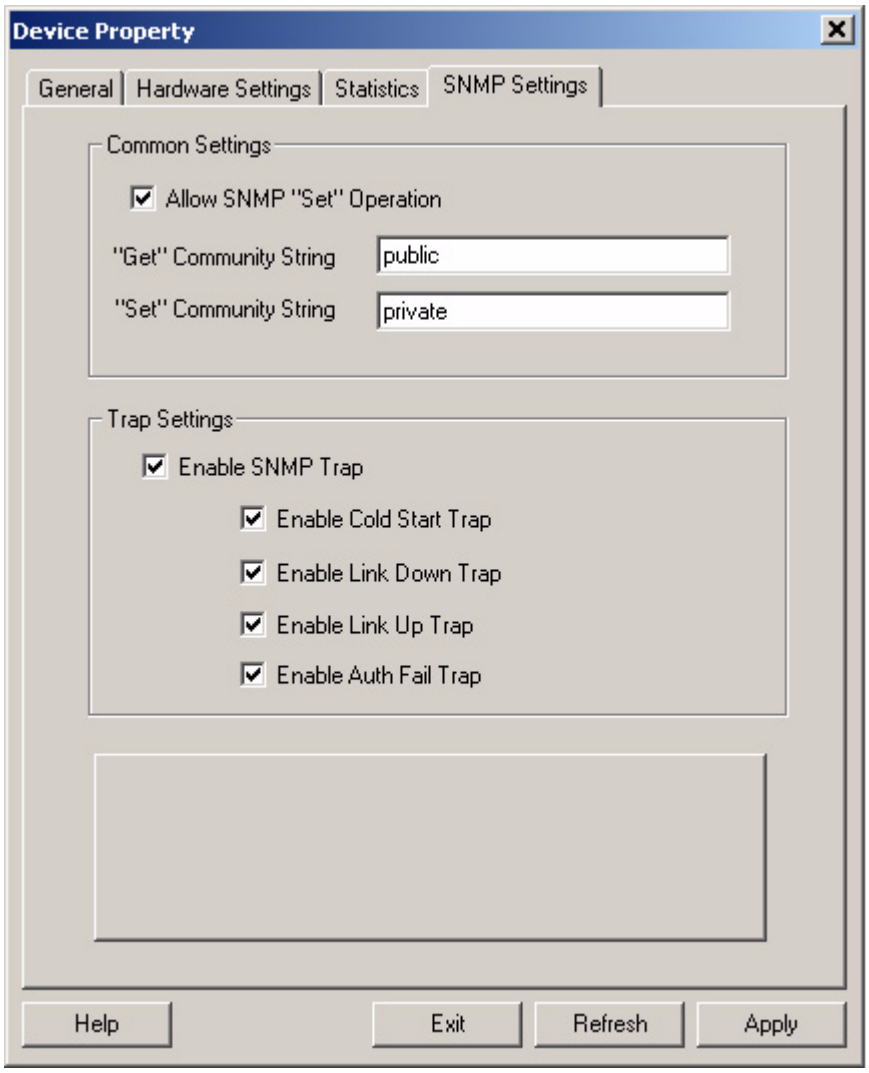
9 Click on the Statistics tab.



From this view you can see statistics about the number of good or bad packets each port has received and transmitted, based on how you have configured the Counter Mode setting (see step 8 on page 33).

You can reset all counters to zero by clicking Clear.

10 Click on the SNMP Settings tab to see the following window:



11 You can view and edit the SNMP Common Settings and Trap Settings for this particular NJ200.

12 Click Apply to save any changes you make and a configuration summary dialog box will appear. Verify the information and click OK.

13 Click Exit to close the Device Property window.

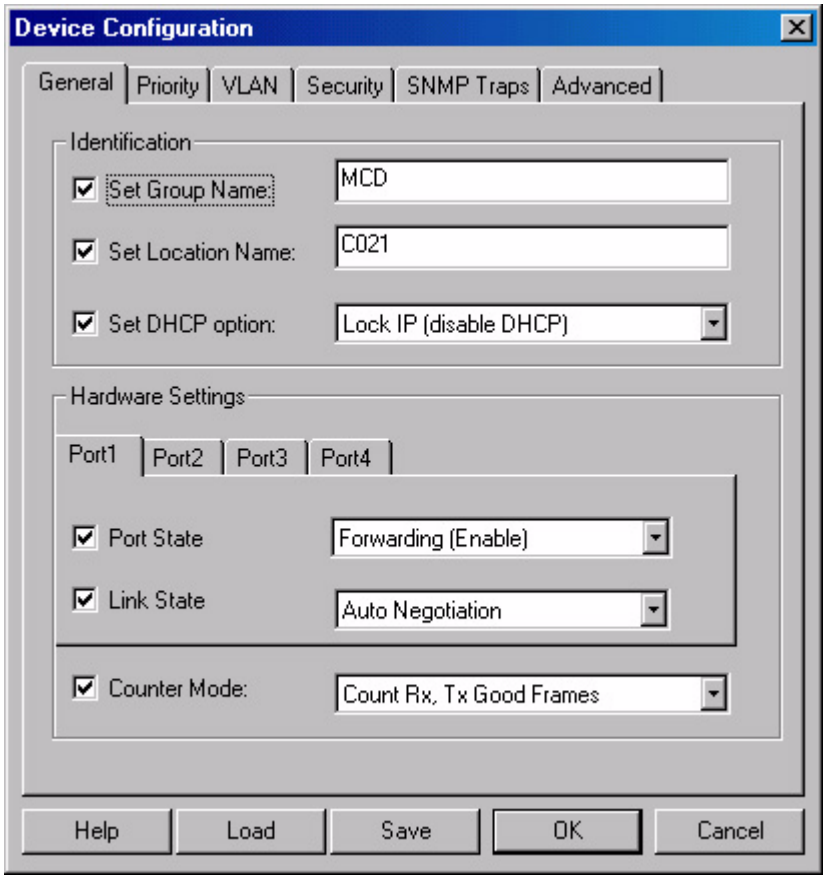
Changing Device Configuration

Many of the properties that you can view from the Device Property windows can be changed from the Device Configuration window. Here's how to use this feature:

1 Select one or more Network Jacks from the devices list.

NOTE: It is possible to configure multiple Network Jacks at the same time.

2 Select Configuration from the Devices menu or the toolbar or right click on a device and select Configuration from the pop-up menu.



NOTE: To make configuration changes to a Network Jack from the Central Configuration Manager, the NJ200 must already be discovered and part of the device database, and you must be able to communicate with the device from your workstation. If you can't communicate with the device at this time, you will receive an error message when you try to configure the unit.

This window has six tabs across the top--General, Priority, VLAN, Security, SNMP Traps, and Advanced. Check the box next to any setting you want to change from within these six areas.

3 Select the General tab.

4 To change or set the Group Name, check the box next to that field. You can set a Group Name to anything you want, up to 256 characters.

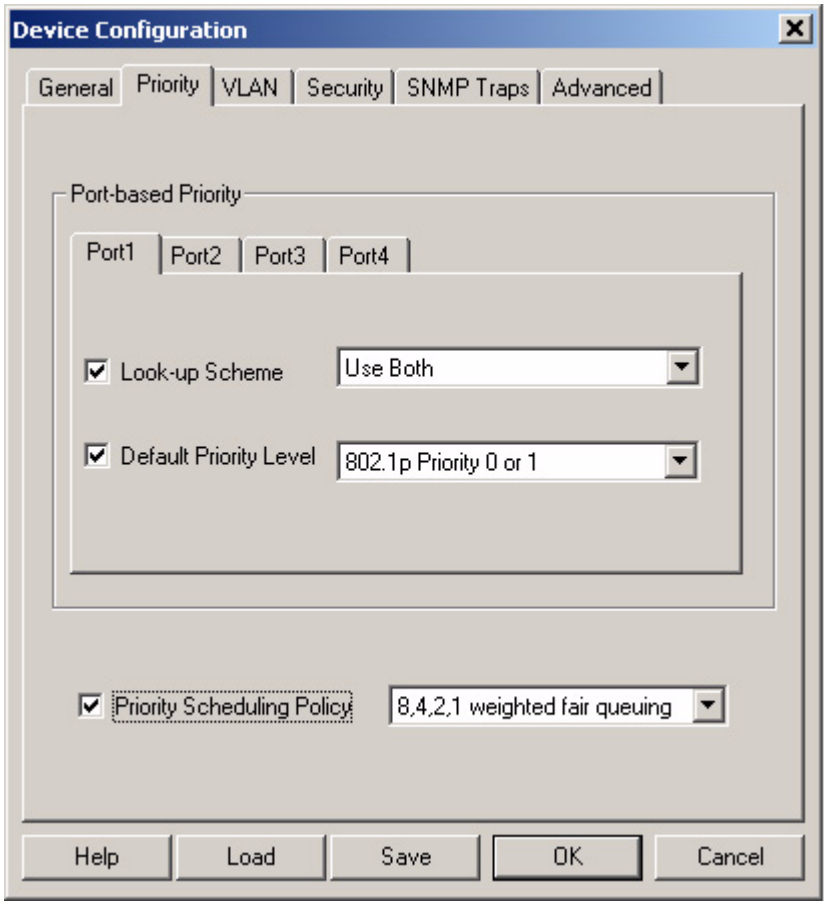
5 Change or set the Location Name by checking the box next to that field and entering up to 256 characters.

6 Configure the DHCP setting to the desired state.

7 Change the Port and Link states of any of the Network Jack's ports by checking the box next to the characteristic you want to modify and selecting a value from the drop list.

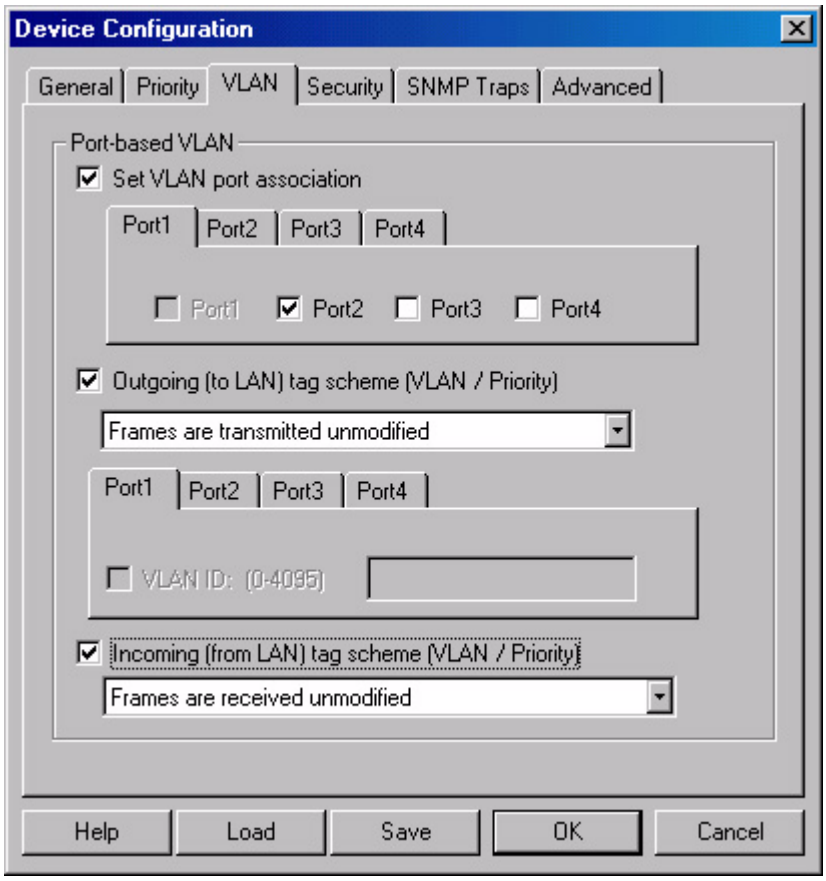
8 By default, the Central Configuration Manager will display a count of good transmissions in the Property window. If you would rather track errors and collisions, select that option in the Counter Mode setting.

9 Click the Priority tab along the top of the Device Configuration window to view these settings:



10 From this screen you can change the Look Up Scheme and Default Priority Level of each port on the NJ200 and the Priority Scheduling Policy of the Network Jack itself. Check the box next to the setting you want to change and select an option from the drop-down list.

11 Click the VLAN tab to configure your Network Jack for use in a virtual LAN.

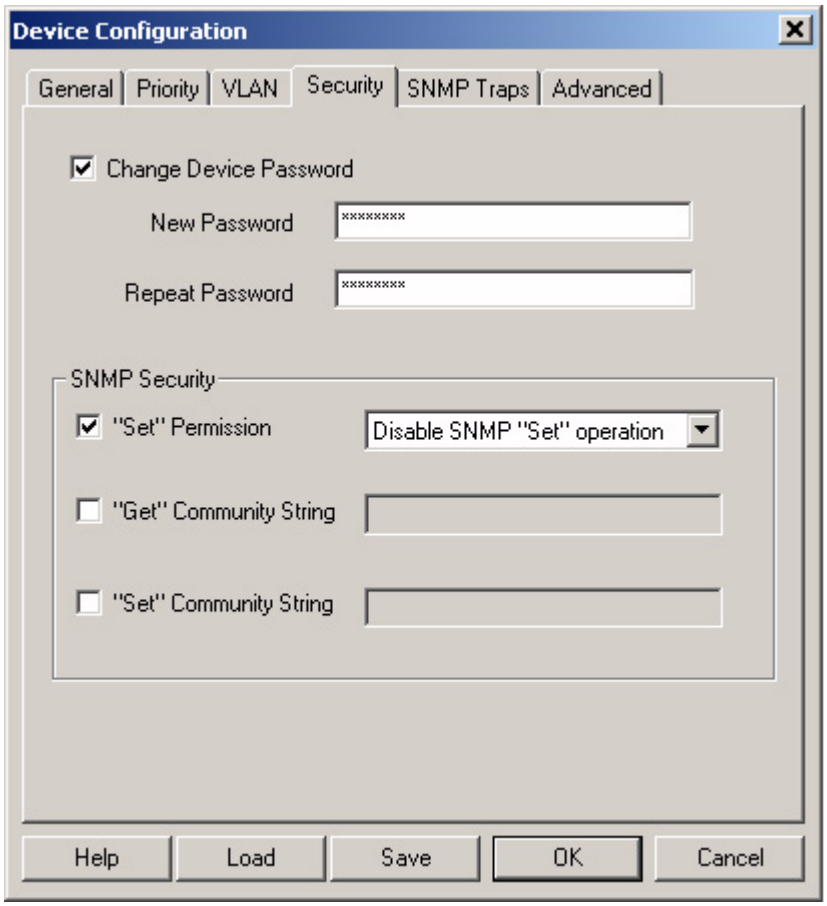


12 From this window you can associate any of the four ports with any other ports on this Network Jack to form a VLAN group. You can specify the tag schemes for the VLAN you create.

NOTE: VLAN stands for Virtual Local Area Network. VLANS are used to create a subgroup of systems within a LAN in order to isolate traffic between network devices. The NJ200 supports VLAN tagging, but does not route inbound traffic on a per-port basis.

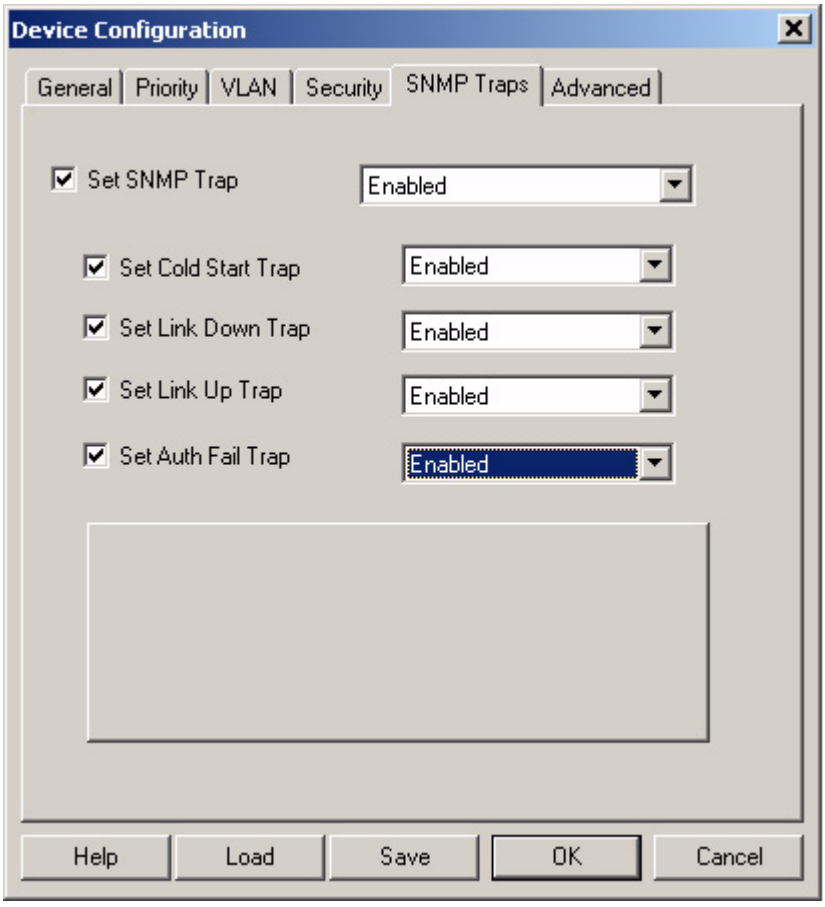
If you change your VLAN settings, they should be consistent with your network's VLAN settings.

13 Select the Security tab to set the security options of the NJ200 Network Jack.



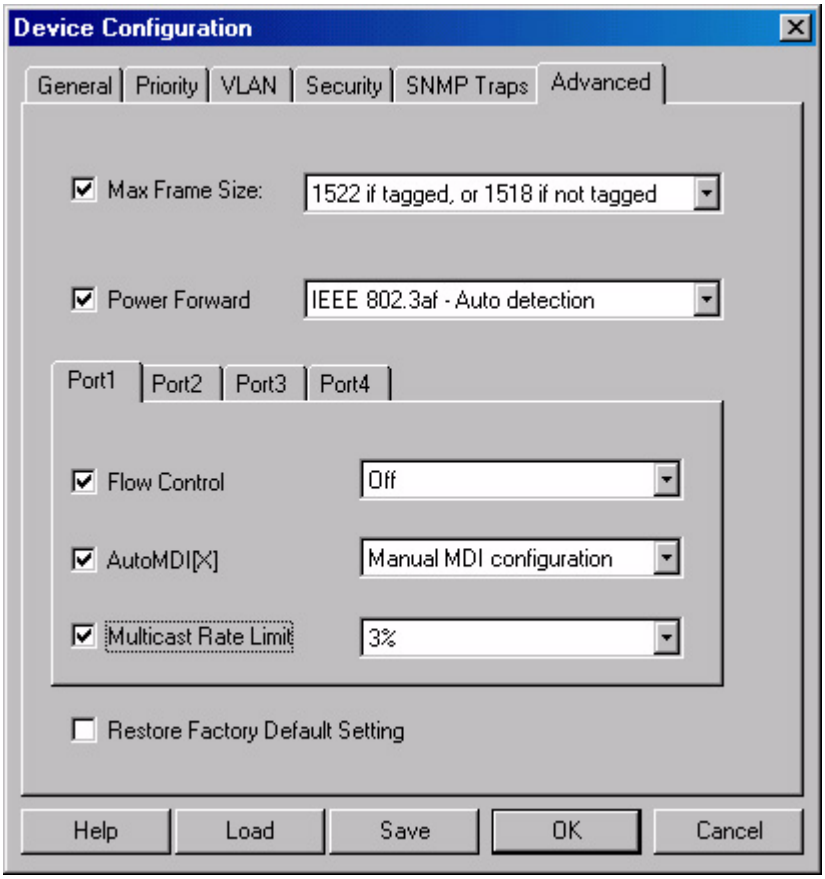
14 You can change the device password (the default password is "**password**"), and adjust the SNMP Set permissions and Community Strings.

15 Click the SNMP Traps tab to change the trap settings of the NJ200.



16 From this window you can enable or disable the device's Cold Start, Link Down, Link Up, and Authorization Fail traps to be sent to your SNMP console.

17 Select the Advanced tab for this window:



18 You can change the Max Frame Size and Power Forward settings by selecting an option from the drop-down list.

19 From this window, you can see another set of tabs, one for each port on the Network Jack. Click on the port whose settings you want to change, check the box next to the setting to be changed, and select a value from the drop-down list. You can change the Flow Control, the AutoMDI(X) crossover capabilities, and the Multicast Rate Limit.

20 At the bottom of this window is an option to restore some of the configuration settings to their default values. If you check this box, the following settings will be restored:

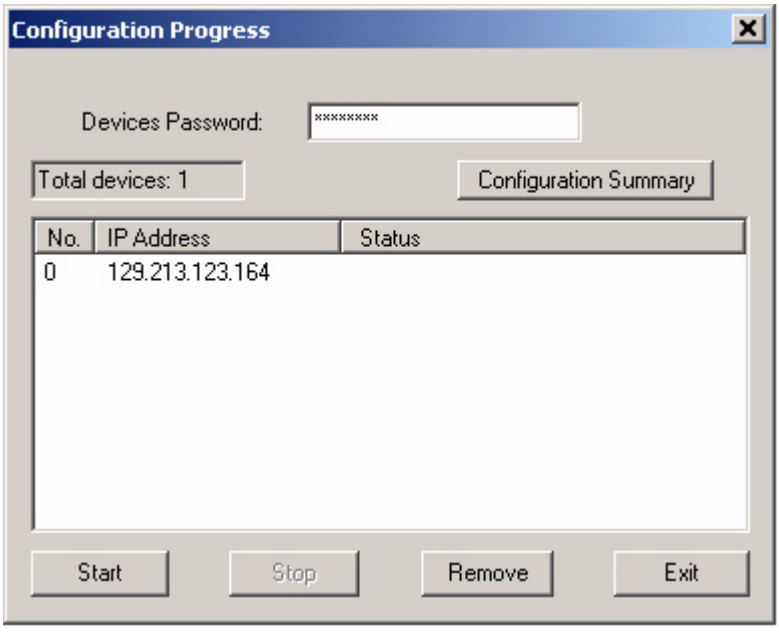
Global Setting	**Default Value**
Max Frame Size	1518 or 1522 if tagged
Counter Mode	Count good frames
Priority Scheduling Mode	8, 4, 2, 1 weighted
VLAN Tag for LAN Port (egress)	Egress frame unmodified
VLAN Tag for LAN Port (ingress)	Ingress frame unmodified
Power Forward	Auto detection
SNMP "Set" Permission	Not allowed

Port Setting	Default Value
State	Forwarding
Link	Auto negotiation
Flow Control	Off
MDI[X]	Force MDI
Multicast Limit	3%
Priority Lookup	Tag & IPV4
Port Priority	1
VLAN ID	1
Port based VLAN	All ports on same VLAN

The values that remain unchanged when you click Restore Factory Default Settings are:

- Group Name
- Location ID
- Password
- IP Address
- DHCP Settings
- SNMP Community Strings
- SNMP Trap Settings

21 When you are finished entering the configuration changes to your NJ200 Network Jack, click the OK button and a Configuration Progress dialog box will appear. If you don't want to apply the changes you made, click Exit to discard those changes and exit the window.



22 If you click Configuration Summary, you will see a summary of all the changes you have made. Enter your password and click Start. As the Network Jacks are configured, their status will be updated in the Status column.

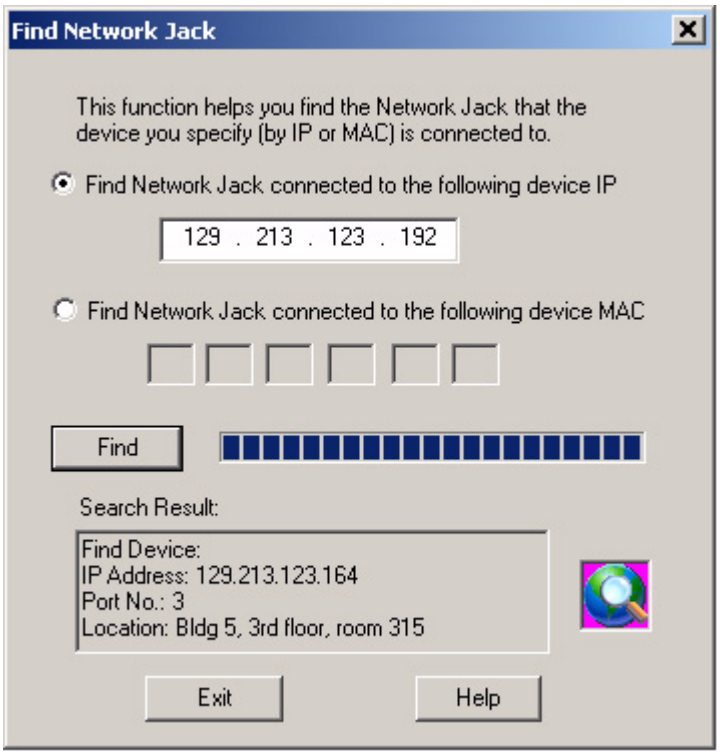
NOTE: If a NJ200 Network Jack that was once discovered by the Central Configuration Manager is no longer connected to your network or if you just want to remove a device from the current database, you can select Delete Device from the Devices menu.

Finding Computers Connected to NJ200 Devices

Occasionally you may need to find out which Network Jack a networked device, such as a PC, is connected to. This is one of the many situations where the Location Information field of the NJ200 can be very useful.

If you know the IP address or MAC address of the computer or networked device, you can use the Central Configuration Manager to find the right Network Jack.

1 Select Find Location from the Tools menu. You will see a window like this:



2 Enter the IP address or the MAC address of the PC you wish to find.

3 Click the Find button.

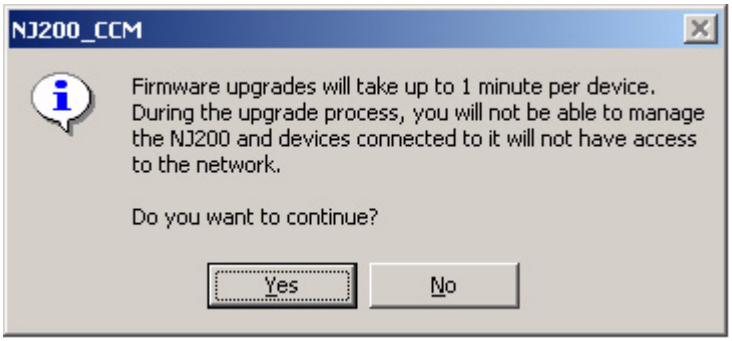
When the search is complete, the Search Results field will display the IP address of the NJ200 that the PC is connected to. It will also show the Location Name assigned to the Network Jack and which port the PC is using.

4 Click OK to close the window.

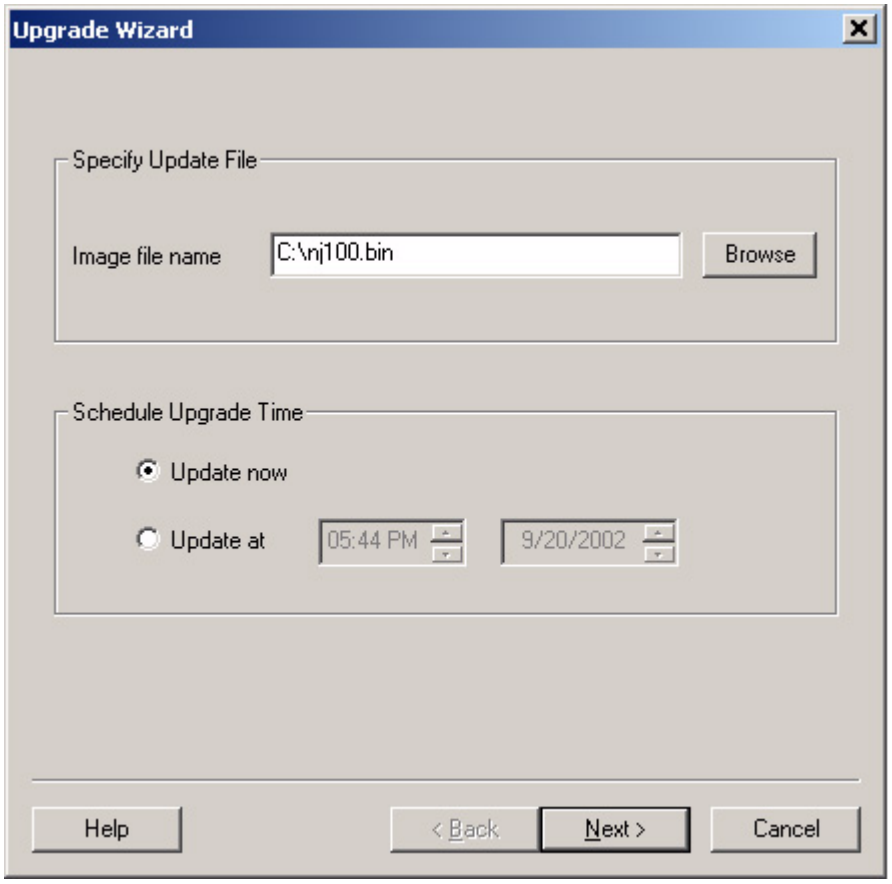
Upgrading the NJ200 Firmware

You can upgrade the firmware on your NJ200s over the network from the Central Configuration Manager. To do so, follow these steps:

1. Select one or more Network Jacks you want to upgrade. You can select groups of Network Jacks using one of the grouping options available to you in the drop-down list at the top left corner of the main window.
2. Select Upgrade from the devices menu. A window like this will appear:



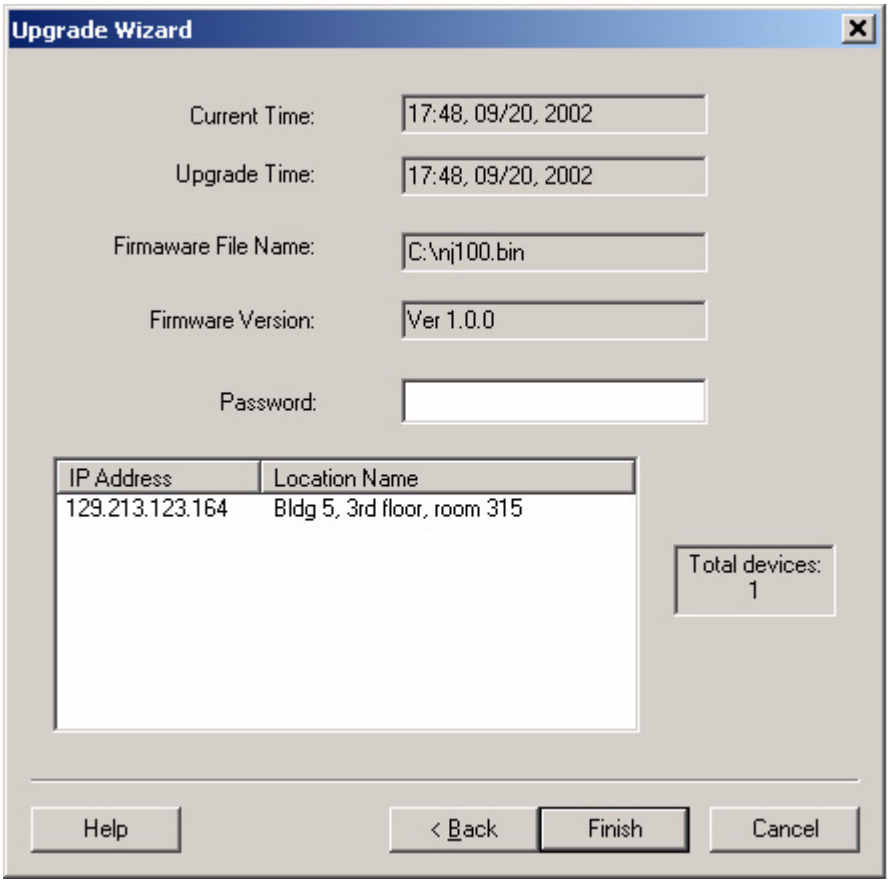
3. Select Yes to continue the upgrade operation. A window like this will appear:



4. Select a valid firmware image by typing the path to the file or by using the Browse button.

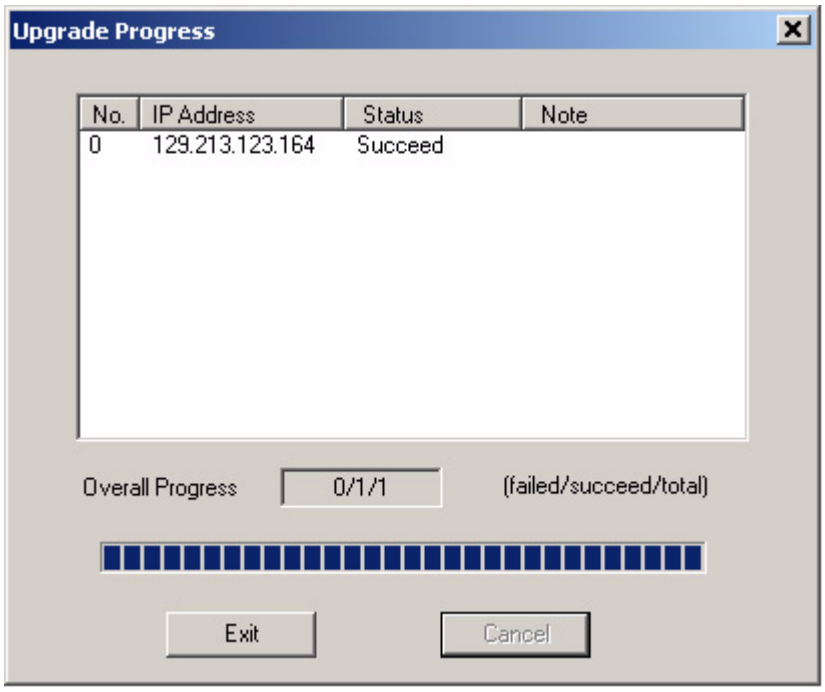
5 Select the time to perform the upgrade. You can either send the update file immediately or select a specific time and date to send the file. You may, for example, want to perform an upgrade during off hours such as a weekend.

6 Click Next and a window like this will appear:



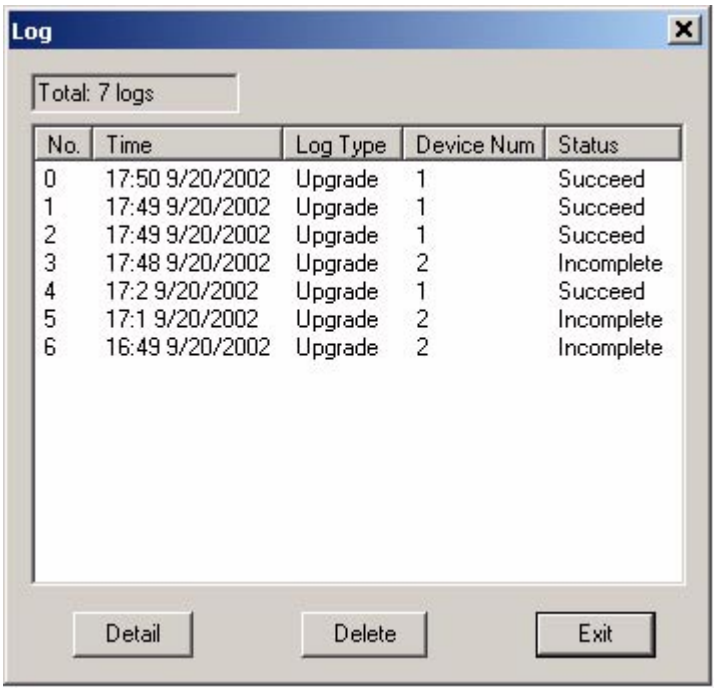
7 Review the list of Network Jacks you want to upgrade. If you want to modify this list, click Cancel and restart the firmware upgrade procedure.

8 Type your password in the Password field, then click Finish. The Upgrade Progress dialog box will appear.



Viewing Log Files

The Central Configuration Manager creates a log file with details of the firmware upgrade operation. This file is in the Central Configurator\Log subdirectory under the directory where you installed the Network Jack configuration software. You can also view a history of firmware upgrades by selecting Log History from the View menu. A window like this will appear:

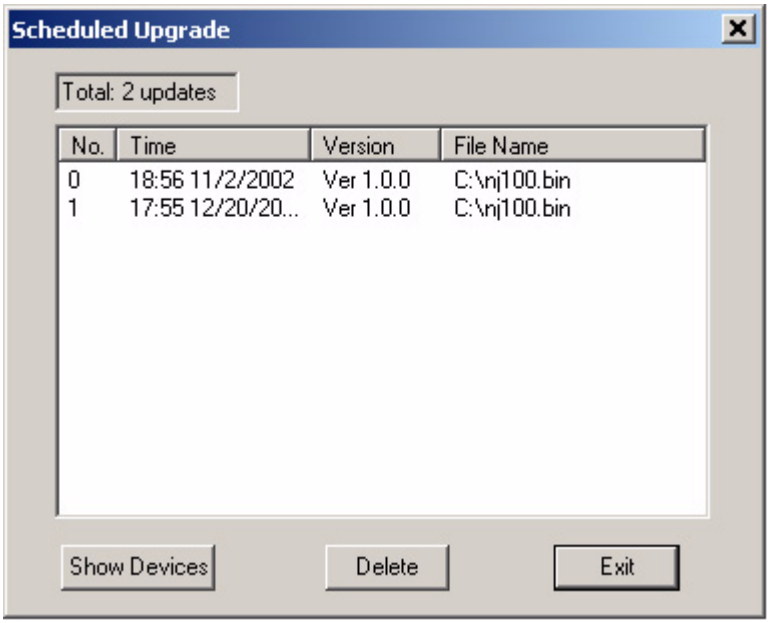


To view the details of a particular log, select it and click Detail. If the firmware upgrade of an NJ200 unit fails for some reason, a message will appear in the upgrade progress dialog box and the log file. Consult the troubleshooting guide on page 45 for more information.

Viewing and Canceling Scheduled Firmware Upgrades

You can select a time and date to send an upgraded firmware image to the Network Jacks in your network. To view and make changes to the firmware upgrades you have scheduled, follow these steps:

1 Select Scheduled Upgrade from the View menu. A window like this will appear:



2 To view the details of a scheduled upgrade, select it from the list and click Show Devices. To cancel a scheduled upgrade, select it from the list and click Delete.

A Troubleshooting the NJ200

If you encounter problems with the Network Jack:

- Verify the Network Jack is receiving power by viewing the Power LED (it should be on). If the Power LED is not on, make sure the:
  - Power Over Ethernet dip switches are set correctly (for either Capacitive Power Discovery Process 24V or 48V or IEEE 802.3af), if your network supports Power Over Ethernet. See "Setting the Power Over Ethernet Dip Switches" on page 7 for instructions.

    If using Power Over Ethernet, make sure the other end of the network cable is plugged into a switch on the network that has Power Over Ethernet integrated into it, or one that feeds into an external midspan power supply that supports Power Over Ethernet.
  - Local power supply is plugged into the Network Jack and into a working electrical outlet, if your network does not support Power Over Ethernet.
- Verify the Network Jack is connected to the network properly by viewing the Link LED (it should be on). If the Link LED is not on, make sure the network cable:
  - Is terminated properly. Refer to the connector manufacturer's instructions for terminating the cable. Be sure to test the connector and verify it is working.
  - Has a valid connection to the network.
  - Adheres to proper length and cabling specifications for your network.
- The Network Jack is configured for manual MDI. Be sure to use a straight-through cable. If you want to use a cross-connect cable, you must change settings in the Configuration Manager software.

Troubleshooting Matrix

Event/Message	Description	Solution
Power LED is not on	Network Jack is not receiving power	Ensure power supply is properly connected. For power over Ethernet, make sure dip switch settings are correctly set and that cable is connected to both the LAN port on the back of the Network Jack and to the workgroup switch.
Link LED is not on	Network Jack has no connection to the network	Make sure network cable is properly terminated. Make sure the Network Jack is connected to the network. Make sure the cable is plugged into the workgroup switch.

Event/Message	Description	Solution
Green LEDs on Ports 1-4 are not on	Network device has no connection to Network Jack	Make sure the cable is properly connected to the network device. Make sure the cable is firmly connected to one of the four Network Jack ports labeled 1-4. Make sure the cable is a good straight-through cable.
Amber LED on Port 1 is not lit	Power is not being forwarded to network device	Make sure the cable is properly connected to the network device. Make sure the cable is firmly connected to one of the four Network Jack ports labeled 1-4. Make sure the cable is a good straight-through cable. Make sure network device is 802.3af compatible. Make sure the power requirement for network device does not exceed 7 watts.
Authentication Failure	Wrong password has been entered	Confirm correct password and re-type.
Timeout	Device did not respond within a specified period of time	Refresh the screen after a few seconds. If the problem persists, try to rediscover the device.
Attributes Error	Unexpected configuration parameters	Confirm that you have specified valid parameter values and retry the configuration operation. NOTE: This error should not appear to the user under normal conditions.
General Error	Something other than authentication failure, timeout or attributes error has occurred	Retry the operation you were performing. NOTE: This error should not appear to the user under normal conditions.

B Technical Support

3Com provides easy access to technical support information through a variety of services. This appendix describes these services.

Information contained in this appendix is correct at time of publication. For the most recent information, 3Com recommends that you access the 3Com Corporation World Wide Web site.

Online Technical Services

Register for support at *support.3com.com/registration/frontpg.pl*

3Com offers worldwide product support 24 hours a day, 7 days a week, through the following online systems:

- World Wide Web site
- 3Com Knowledgebase Web Services
- 3Com FTP site
- 3Com Connection Assistant

World Wide Web Site

To access the latest networking information on the 3Com Corporation World Wide Web site, enter this URL into your Internet browser:

http://www.3com.com/

This service provides access to online support information, such as technical documentation and a software library, as well as support options that range from technical education to maintenance and professional services.

3Com Knowledgebase Web Services

The 3Com Knowledgebase is a database of technical information to help you install, upgrade, configure, or support 3Com products. The Knowledgebase is updated daily with technical information discovered by 3Com technical support engineers. This complimentary service, which is available 24 hours a day, 7 days a week to 3Com customers and partners, is located on the 3Com Corporation World Wide Web site at:

http://knowledgebase.3com.com

3Com FTP Site

Download drivers, patches, software, and MIBs across the Internet from the 3Com public FTP site. This service is available 24 hours a day, 7 days a week.

To connect to the 3Com FTP site, enter the following information into your FTP client:

- Hostname: **ftp.3com.com**
- Username: **anonymous**
- Password: **<your Internet e-mail address>**

NOTE: With Web browser software, such as Netscape Navigator and Internet Explorer, you do not need a user name and password.

3Com Connection Assistant

The 3Com Connection Assistant is interactive software that gives you an easy to use diagnostic and repair tool. Using this tool makes troubleshooting easier and helps you quickly resolve problems. Go to:

Start/Programs/3Com NIC Utilities/3Com Connection Assistant

to find the utility.

By using the Connection Assistant you can:

- Automatically check your computer and repair problems
- Search for solutions for specific hardware or software problems
- Find answers to your questions about business processes. tasks, and applications
- Connect, via the Internet, to technical support when you need assistance with your computer hardware and software
- Get assistance even if you are not connected to the Internet

For more information about 3Com Connection Assistant, contact your help desk directly or visit us at: *www.3com.com/connectionassistant*

Support from Your Network Supplier

If you require additional assistance, consult your network supplier. Many suppliers are authorized 3Com service partners who are qualified to provide a variety of services, including network planning, installation, hardware maintenance, application training, and support services.

When you consult your network supplier, have the following information ready:

- Product model name, part number, and serial number
- A list of system hardware and software, including revision levels
- Diagnostic error messages
- Details about recent configuration changes, if applicable

If you are unable to consult your network supplier, see the following section on how to contact 3Com.

Support from 3Com

If you are unable to obtain assistance from the 3Com online technical resources or from your network supplier, 3Com offers technical telephone support services. To find out more about your support options, go to the Web site associated with your region of the world shown below.

Region	URL for Regional Web Site
Asia and the Pacific Rim	ap.3com.com/contacts/support-contacts.html
Africa, Europe, and the Middle East	emea.3com.com/support/supportnumbers.html
Latin America	lat.3com.com/lat/support/index.html
North America	csoweb4.3com.com/contactus/

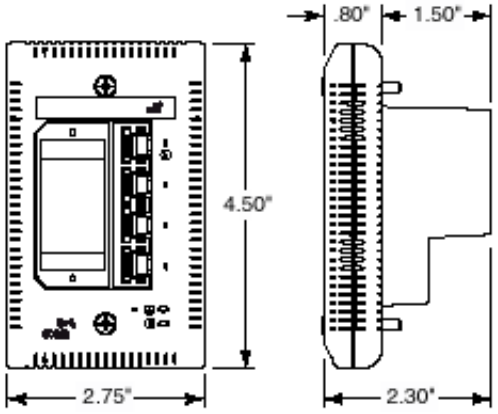
When you contact 3Com for assistance, have the following information ready:

- Product model name, part number, and serial number
- A list of system hardware and software, including revision levels
- Diagnostic error messages
- Details about recent configuration changes, if applicable

Returning Products for Repair

Before you send a product directly to 3Com for repair, you must first obtain an authorization number. Products sent to 3Com without authorization numbers will be returned to the sender unopened, at the sender's expense. To obtain an authorization number, go to the Web site listed above for your region.

C Product Specifications



Hardware	
Power consumption	<5 watts without power forwarding Maximum 13 watts with power forwarding (depending on the device drawing power)
Network Interface	
10 Mbps Ethernet 10BASE-T	Ethernet IEEE 802.3 industry standard for a 10 Mbps baseband CSMA/CD local area network
100 Mbps Ethernet 100BASE-TX	Ethernet IEEE 802.3u industry standard for a 100 Mbps baseband CSMA/CD local area network
Performance	
Auto-negotiation	Communication speed (10 Mbps or 100 Mbps) and duplex mode (full or half) can be determined through auto-negotiation with the attached devices. The Network Jack attempts to negotiate the fastest connection possible (100 Mbps full-duplex). The communication speed and duplex mode can also be controlled using the configuration management software.

Environment	
Operating temperature	32° to 104° F (0° to 40° C)
Storage temperature	-22° to 194° F (-30°- to 90° C)
Operating humidity	10-90% noncondensing
Storage humidity	10-90% noncondensing
Operating Altitude	8,000 ft. max
Storage Altitude	20,000 ft. max

Standards Conformance

IEEE 802.3 10BASE-T, 100BASE-TX and auto-negotiation

Power Over Ethernet (Capacitive Power Discovery Process and IEEE 802.3af)

Power forwarding (IEEE 802.3; 6 watts, 48 volts)

Features	
Power Over Ethernet	Compatible with IEEE 802.3af and Capacitive Power Discovery Process
Local power supply	Required for networks that do not support Power Over Ethernet
Voice Over IP (VoIP)	Compatible with VoIP standard.
Power forwarding	Power forwarding Port number 1 can be used with any standard networking device as well as to power a device such as a VoIP telephone on a network that uses IEEE 802.3af-compatible Power Over Ethernet.

REGULATORY INFORMATION

FCC COMPLIANCE

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

FCC CLASS A VERIFICATION STATEMENT

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a commercial installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case, the user will be required to correct the interference at the user's own expense.

Changes or modifications not expressly approved by 3Com could void the user's authority to operate this equipment.

INDUSTRY CANADA (IC) COMPLIANCE STATEMENT

This Class A digital apparatus complies with Canadian ICES-003.

AVIS DE CONFORMITÉ À LA RÉGLEMENTATION D'INDUSTRIE CANADA

Cet appareil numérique de la classe A est conform à la norme NMB-003 du Canada.

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September 23, 2002